St Louis Novemb 26th 1840

My dear Doctor

I received your kind letter more than 3 weeks ago, and would have answered it immediately, if I had not expected my things every day — but longer wait I can not, though they are not yet here, and consequently I can not gratify your wish relating to the Chara:-genus.

Your proposition to name a new genus after my humble self is very flattering, so much so that I can not object — and other objections in the shape of an other new genus of my name in esse or in posse" do not exist to my "knowledge. So, if you have no other name for a new genus, do as you were kind enough to propose — and if you possibly can, favour me with a specimen of the plant for our collection. —

I send you hereby the $20, which I owe you ($ 8.00 + 2.00).

At Niagara I found the plants indicated by you, especially the Hedeoma and the Hypericum (the latter past flowering) and many others which I had never seen in the southwestern country. Others equally interesting I found

on the banks of Lake Huron and on the Islands of Lake Michigan. In open woods near Pere, on Illinois river I found an Eupatorium nearly related to the german H. echioides 3–4 feet high, with long hispidly hairy obloncolate leaves etc – I can not find it described. Also there on the river bank Napaea dioica.

Since my return to St Louis I was not able to do any thing in our favourite science – could not even select some plants for the families which you have now under review, and which may be interesting to you – but the time will come, when I can apply myself a little more to botany. –

I understand that the plants collected in Mr Nicollet's northwestern expedition last year have not long ago been sent east, and are perhaps already in your hands.

I hope to hear soon again from you and to receive the next number of your highly interesting Flora as soon as it is published.

My respects to Dr Torrey.

Truly yours

George Engelmann

Dr Asa Gray
New York.

25

Dr Asa Gray
Care of Dr Torrey
30 MacDougal Str
New York

St Louis April 6th 1841.

Dear Doctor,

Annexed I send you a long long list of desiderata extracted from Torrey's Report to the Legislature. If any young botanist in your neighborhood who has time and skill and zeal to collect, will send me any of the plants named I offer him in exchange western and european plants. I have in the last months begun a correspondence with Mr Curtis N Carolina and Prof Short in Louisville and expect much benefit from it. Mr Gambel of Philadelphia a pupil of Mr Nuttall has been here a few days ago on his way to Sta Fe where he expects to stay a whole year. — I have received nothing yet respecting the Chamis but expect it daily. — Page 25. to 32 of your 2d volume I have got Galium latifolium Mx I have found in Northwestern Arkansas and near Little Rock on barren stony hills. — I am arranging my american Collections now and find a large number of plants which I should like to send to you, but they may not be new and interesting to you and the difficulty of sending them safely is such that I still hold on till I can find a perfectly safe opportunity. —

I have told you of a Dr C. H. Schultz in Deidesheim Germany, who occupies himself principally with the Compositae and especially the Cichoriaceae and intends editing a Herbarium Universum of Cichoriaceae. — He writes me that he is delighted with your [illegible] which I have send him, and requests me to communicate to you the following notes.

Synthia is an entomological genus and ought therefore not to be admitted into [illegible]. He has called the plant in question Luthera virginica (Linnaea [illegible] 1835.) In Ledebour's herbarium he has found the Apargia borealis Bong. = Leontodon boreale DeC prodr VII. 102 from the Isles of Sitcha, he has after a careful examination ascertained that it is a Crepis = Crepis borealis C. H. Schultz. the little teeth of the radii of the pappus are somewhat elongated, and approximate a pappus plumosus not sufficiently though to constitute a new genus.

I have been delighted to learn that you have finally got possession of the plants collected on Mr Nicollet's second expedition. —

Is there any thing new? —

You will do me a great favour by letting me occasionally hear from you. Is the first ~~volume~~ number of your 2d volume now out?

with sentiments of Respect and Friendship

Yours &c

George Engelmann

Asa Gray MD
New York

Received April. 18 —

Single

25

ST LOUIS
APR 6
MO.

Asa Gray MD
Care of Prof J. Torrey
30 McDougal street
New York

Halenia deflexa Griseb
C ~~Gentiana totiana Pursh~~
chloroides P.
Erythrea Muhlenbergii Griseb
ramosissima Pers
C ~~Lysimachia ciliata Pursh~~
Limnanthemum lacunosum Gris
C ~~Phlox subulata L~~
Convolvulus spithameus L
Hydrophyllum canadense L
C ~~Monarda fistulosa L~~
B — didyma L
Cynanthemum Torrei Benth
B — lanceolatum Pursh
Collinsonia canadensis L
Scutellaria pilosa Mx
integrifolia L
Dracocephalo parviflorum Nutt
Stachys hyssopifolia Mx
B. Gratiola aurea Muhl
Limosella subulata Ives
B. Gerardia purpurea L
C ~~minima~~ Raf
C ~~Melampyrum americanum Mx~~
Orobanche americana L
Verbena spuria L
Utricularia all the species!
Primula mistassinica Mx
Hottonia inflata Ell
B Lysimachia stricta Ait.
B — quadrifolia L
Amaranthus pumilus Nutt
Scheuchzeria palustris Meyer
C ~~Atriplex arenaria Nutt~~
C ~~Triglochin maritima L~~
Salsola soda L
Acnitum maritimum Nutt
C ~~Polygonum pensylvanicum L~~
C ~~aviculare L~~
cilinode Mx
C ~~Euphorbia polygonifolia L~~
Podostemum ceratophyllum Mx
Quercus ilicifolia W.
olivaeformis Mx
Betula populifolia Ait
C ~~lenta L~~
nana L
Salix all the species!
Populus balsamifera L
tremuloides Mx
nigra Mx
Comptonia asplenifolia Ait
Ulmus racemosa Thomas
Abies nigra Mx.
alba Mx
balsamea Mill
pendula
C ~~Cupressus thyoides~~
Hydrophanis cordifolia Nutt
Udora canadensis Nutt.
Habenaria Hookeriana Torr
Habenaria blephariglottis Hook
ciliaris R Br
dilatata Spr
hyperborea
flava
psycodes
lacera
obtusata
bracteata
Microstylis ophioglossoides
brachyphylla Gray
Tipularia discolor Nutt
Corallorhiza verna Nutt
C ~~maculata Nutt~~
B Arethusa bulbosa Nutt
B Pogonia ophioglossoides R Br.
verticillata Nutt
Listera cordata R. Br
C ~~Ophrys pubescens R Br~~
B. Cypripedium acaule Ait
arietinum Ait
Schollera graminifolia Muhl
Heteranthera reniformis
Zygadenus glaucus Nutt
Trillium ~~erythrocarpum Mx~~
C ~~erectum L~~
cernuum L
B Medeola virginica L
Allium tricoccum Ait
Convallaria ~~trifolia L~~
C ~~borealis Ait~~
~~Streptopus roseus Mx~~
americanus Gray
C ~~lanuginosus Mx~~
B Uvularia sessilifolia L
Sagittaria pusilla Nutt.
Lizuela melanocarpa Desv.
Juncus stygius L
C ~~nigrescens Nutt~~
filiformis L
C ~~tenuis W~~
Eriocaulon septangulare With
Xyris caroliniana Walt
Smilax caduca L
Peltandra virginica Raf
Symplocarpus fetida Nutt
B Orontium aquaticum L
Najas canadensis Mx
Potamogeton diversifolius
prolongus
gramineus
Triglochin elatum Nutt
C ~~Melanthium spathaceum~~
Cyperus all the species
Fuirena squarrosa
Eleocharis olivacea Torr
C ~~rotundata Sch~~
Eleocharis ~~obtusa Schultes~~
tuberculosa
pygmaea
Scirpus planifolius Mich T.
~~subterminalis Torr~~
C ~~castellatus Torr~~
C ~~atrovirens Mich~~
Gyneus M
eriophorum Mx
lineatus Mx
Isolepis subsquarrosa Schr.
Trichelostylis C ~~[illegible] Torr~~
Rynchospora C ~~capillacea Torr~~
gracilenta Gray
C ~~glomerata Vahl~~
cephalanthe Gray
C ~~Cladium mariscoides Torr~~
Scleria reticularis Mx
laxa Torr
C ~~verticillata Muhl~~
Carex exilis Dew.
C ~~disperma D.~~
C ~~rosea Schk~~
C ~~sparganioides Mich.~~
C ~~stipata Mich.~~
decomposita Dew
C ~~Crinides Schk~~
C ~~trisperma Dew~~
C ~~Deweyana Sch~~
tenuiflora Wahl
festucacea Schk
C ~~aurea Nutt~~
C ~~aquatilis Wahl~~
C ~~polytrichoides Mich~~
pedunculata Muhl
C ~~triceps Mx~~
C ~~formosa Dew.~~
C ~~Davisii Torr~~
Lanuginosa Mx
novae angliae Schw
striata Mx
C ~~laxiflora Muhl~~
C ~~chimea Boott~~
C ~~aceras M~~
C ~~careyana D.~~
digitalis W
livida W
B ~~scabulata Mx~~
C ~~Scirpus lacustris Muhl~~
oligosperma Mx
physocarpa Boott
Schweinitzii Dew
trichocarpa Muhl
flexilis Rudge
C ~~[illegible] Schk~~
C ~~Muhlenbergia glomerata Trin~~
Vilfa longifolia Torr
heterolepis Gray
Milium effusum L
C ~~[illegible] Torr~~
C ~~Piptatherum nigrum Torr~~
C Lipa avenacea L
C ~~Oryzopsis asperifolia Mx~~
Panicum hispidum Muhl
verrucosum Muhl
C ~~[illegible]~~
Aristida gracilis El
Calamagrostis canadensis
coarctata T.
C ~~inexpansa Gr~~
Aira atropurpurea Wade
Trisetum ~~palustre Torr~~
purpurascens Torr
C ~~subspicatum Trin~~
C ~~Koeleria borealis M~~
C ~~Holcus aristatus Raf~~
C Festuca nutans W.
C ~~Glyceria acutiflora Torr~~
C ~~Cinna dentata Torr~~
C ~~venusta Willd~~
Torreana Spr.
canadensis Torr
C ~~hirsuta Mx~~
Uniola gracilis Mx
C ~~spicata L~~
C ~~Koeleria truncata Torr~~
Bromus ciliatus L
Elymus strictus W
C ~~Equisetum scirpoides Mx~~
Aspidium goldianum Hook
lancastriense Spr
C ~~Cystopteris bulbifera Bern~~
C ~~Dicksonia pilosiuscula W~~
Woodsia obtusa W
C ~~? ilvensis R Br~~
Asplenium thelypteroides
Woodwardia angustifolia Sm
virginica Sm
C ~~Cryptogramma gracile R Br~~
Onoclea obtusiloba Schk
Osmunda cinnamomea
~~regalis Dra~~
Lygodium palmatum Sw
Botrychium dissectum M
simplex Hitch
C ~~Lycopodium reptans L~~
C ~~lucidulum Mx~~
C ~~apodum L~~
Azolla caroliniana L
Characae all and in several specimens!

The following plants enumerated in Torrey's report I should like to obtain from New York and offer in exchange western plants or European specimens of the State of New York

Cypripedium et. [illegible]

Aster pennsylvanicus L
B. Aharnus ilnifolius L Ker
C ~~[illegible]~~ B. Bigelovii Nuhl
Vicia americana Muhl
~~Astragalus [illegible]~~ Hook
myrtifolius Muhl
B. Phaseolus perennis Walt
Desmodium canescens DC
Dillenii Darl.
acuspidatum Tall
nudiflorum
rigidum DC
B Lupinus perennis L
B Baptisia tinctoria R. Br.
~~Crotalaria maritima Lam~~
Cinnus pumila Mx
pennsylvanica Lois
~~[illegible]~~
B — tomentosa L
C ~~Astragalus canadensis~~ L
C ~~[illegible] Lit~~
C ~~[illegible] Ker~~
C ~~Cassia fagonioides~~ DC
C ~~Desmodium rotundifolium~~ L
Lespedeza capitata Mx
Galactia volubilis Mx
ovalifolius Rich
hirsutus L
tridorus Rich.
B. Robinia caroline L
B. parviflora Ch
~~Crataegus punctata Lat~~
B. Rhexia virginica L
Epilobium molle Torr
alboflorum Lch
Oenothera pumila L
B. fruticosa L
Myriophyllum amphibium
tenellum Pipl.
Hippuris vulgaris L
Ribes prostratum L'Her
hirtellum Mx
rotundifolium Mx
lacustre Torr
cynosbati L
Sedum telephioides Mx
B Saxifraga pennsylvanica L
C ~~[illegible]~~
C ~~Mitella nuda~~ L
Tiarella cordifolia L
Hydrocotyle umbellata L
B ~~[illegible]~~ L

Crantzia linearis Nutt
Selinum canadense Mx
Angelica atropurpurea L
hirsuta Muhl
Heracleum lanatum L
B. Aralia nudicaulis L
hispida L
C ~~Panax trifolium~~ L
B Cornus canadensis L
B Sambucus pubens Mx
Viburnum cassinoides L
B ——— nudum L
pubescens Pursh
lantanoides Mx
acerifolium L
oxycoccus ?
~~[illegible] hirsuta~~
parviflora Lam
grata Ait
ciliata Ill.
coerulea L
oblongifolia Hook
B. Symphoricarpus racemosus Mx
Lonicera glauca Ill
C ~~[illegible]~~
C ~~[illegible]~~
C ~~Olinia [illegible]~~ Torr
~~Valeriana~~ Sylvatica Rich
Veronica novaboracensis Mich
Linnaea glauca Torr
B Eupatorium perfoliatum L
teucrifolium Wl
Nardosmia palmata Hook
Aster prenanthoides Mx
puniceus L
novae belgii L
concinnus Wl
mutabilis Ait
miricadis Lam
bellidiflorus Wl
Tripolium flexuosum Nees
salicifolium Nees
B Sericocarpus solidagineus Nees
B ——— conyzoides Nees
Biotia macrophylla DC
Diplostephium ceruminatum DC
B. Erigeron philadelphicum L
pulchellum Ait
Menachis annua Nees
Chrysopsis falcata Ell.
Solidago rugosa Mill
altissima
petiolata Mich
asperula Ait
C ~~bicolor~~ L
flexicaulis L
juncea Ait
C ~~[illegible]~~ L

Solidago squarrosa Muhl
serotina L
nemoralis L
tenuifolia P
C ~~[illegible]~~
B. Silphium terebinthinaceum L
Xanthi— echinatum Mx
B Helianthus Lenticularis Dc
Corropsis trichophorus Mx
Helianthus divaricatus L
grandiflorus L
B — trachelifolius Wl
altissimus L
Bidens frondosa L
Beckii Torr
Artemisia canadensis L
caudata Mx
C ~~[illegible]~~ Ph
Erechtites hieracifolia Rf
C ~~Cirsium discolor~~ spinosissimum Mx
~~B Cynthia virginica Don~~
B Krigia virginica Willd
Hieracium canadense Mx
B ——— paniculatum L
Nabalus altissimus Hook
Prenanthes DC
Mulgedium acuminatum DC
B Campanula aparinoides
B Andromeda racemosa L
C ~~[illegible]~~
C ~~Gaultheria procumbens~~ L
B ~~Cassiope hypnoides~~ L
Rhododendron canadense L
viscosum Torr
hispidum Torr
B Kalmia latifolia
angustifolia L
glauca L
B Epigaea repens L
C ~~Andromeda latifolia~~ L
B Vaccinium resinosum Ait
~~pennsylvanicum~~ L
tenellum Ait
uliginosum L
Lasiorpa hispidula Torr
C Gaylussacia ~~[illegible]~~
B ——— elliptica Nutt
uliginosa Torr
B Chimaphila maculata P.
Hypopithys lanuginosa Nutt
Pterospora andromedea N
C ~~Monotropa [illegible]~~
Pinus all the species
Arbutus uva ursi L
Gentiana linearis Pursh

St Louis Mai 30th 1841

My dear Doctor,

two days ago I got your letter, and a day before that I had received the first part of your second volume, through which I looked with much gratification; but I have had no leisure to examine it carefully; and write this in haste to answer some of your questions.

Any thing that you want to send to Germany you will best put on board some Bremen vessel. Dr Schultz's direction is: Deidesheim, near Durkheim Pfalz [which is a part of Bavaria]

As to sending numbers of the Flora, I do not know — as I dont know how the returns of such small amounts of money should be made.

I am very much obliged to you for the promptness with which you have endeavored to make up the desiderata for me; and am only sorry that I probably can make no returns myself before fall or beginning of winter. — The same gentlemen who have paid you the money for me, will charge themselves with any thing you may have to send to me: Messrs E & T. Poppe Pearl street, No. 90 or 92 I believe. — Please direct the parcel to Dr G Engelmann, care of Messrs Kinsman & Sewes St Louis Missouri

Nuttalls paper on the Compositae I have got from Mr Gambel of Philadelphia, who called

on me on his way to Sta Fe.

Your questions I can not answer but is factorily I do not recollect ever to have sent seeds of a Leonurus to Frankfort, nor did Dr Fresenius show me the plant there.—

His missouriensis is probably Virginiana (?) the only one which we have here, if it is not a Rocky Mtn plant which Mr Duerinck may have obtained in a Garden here.

Ceanus Duerinckii is probably a plant nearly related to virginiana and carolina from the Mountains, cultivated here in a garden. I do not know Spach's C. densiflora (I can not get at my books now moving dont know therefore, wether I quote right), but the name would be appropriate for this plant; racemes pendulous flowers crowded.— I have a specimen from Mr Duerinck, which I will send you. He is now in Cincinnati but I will write him about these things.

I have sent the seeds of Actiaomeris helianthoides and squarrosa to Francfort— which the opposite folia is I dont know; but have very little faith in any of these species.— You find in Decandolle's Prodromus a Campanula intermedia (I believe) also named by Dr Fresenius, which is nothing but C. aconitinata, sent by me.

Of both Helianthus I know nothing at all— but we have several species which I can not identify.

Heracleum asperum Bisch. I have seen last summer in the bot Garden of Heidelberg but I am confident that I never sent the seeds from here. I do not recollect ever to have seen an Heracleum in the U States.

Lathyrus Engelmann appears to be pusillus Ell from the description. I have not seen it.

Trifolium platycephalum is perhaps Tr. carolinianum. I have collected the seeds in low shady woods near Ft Gibson, and considered the plant there to stolonifer but can not tell any thing definite about it.

Monarda amplexicaulis Bischoff is a very common plant here, in flower now, before any other Monarda; but the leaves are not assise but decyssheat petiole; cordate. I could not identify it but am confident it must be a well known old species.

In a week I expect to move to my new place where I shall have a convenient study all to myself, then I expect, if the burning heat of the young summer does not create too much sickness, to make up a collection and notes for you; but I wont promise you would be indeed not to believe any more, as I have disappointed you before.— Of Chara etc I have received nothing as yet.— I expect soon to write again.

Very truly your friend
George Engelmann

Dr A. Gray

St. Louis
JUN
1
Mo.

Dr Asa Gray

Dr Torrey
31 McDougal street
New York

Answered Aug 11.

St Louis June 25th 1841

My dear Doctor

I send you by Mr Ch. Rust, who is going from here to Germany, and passes through your city, a parcel of plants with a few notes which you will find in the package. — Out of the Plants — with labels of gray paper, my name, you may keep yourself or give them to the gentlemen, who will favour me with custom plants — Next winter I shall send them more — now I have no time. — The other specimens with other labels I have only one I would not like to part with them, I shall be obliged to you if you would send them back when you have no use with them. — More by the next occasion — Dry notes and seeds will be very thankfully received. In haste!

I am yours

George Engelmann

Please to send for the parcel to Mr Ch. Rust Astor house.

New York

Pascal
Affing Mlle A.

[illegible] left a small [illegible] with you [illegible] deliver the [illegible]

[illegible] 3d Aug 1841

Astoria, Co

My dear Doctor

with great concern I learnt by your recent letter that the parcel of plants, which I sent you has not arrived. Mr Lost staid only a day or two in New York & may have forgotten the parcel altogether, and taken it along to Bremen. or he may have left it [illegible] that you would [illegible] for it and [illegible] the most probable or he [illegible] left it [illegible] Wrichs & Krüger [illegible] case I [illegible] in order for them. I [illegible] them to [illegible] him what I have done with [illegible] to give [illegible] well to enquire in [illegible] O & K should not have [illegible] experience that things left in the Astorhouse are very difficult to find or obtain and a great deal of energy and perseverance may be necessary. it would be well to [illegible] all their places where they [illegible] baggage. there is in the smoking room N.E corner of the building a large case or wardrobe [illegible] there [illegible] possibly find it. [illegible]

Does you or any of the Kin, if not please to
inquire at the E (Opp.) Chestnut Ridge. He will
charge himself with any thing that you may have
to send to me. More to give him will
the number of you work for me and of
the payment $ [illegible] for him. I will to
[illegible] to [illegible] pounds = Texas. [illegible] bound
[illegible] if you [illegible] of me. You will oblige
me if you will let me know what families
you have before you; I will then look through
[illegible] and always let you know, but to
appear to be very doubtful or interesting —
though I have no doubt, that most of it is
not new to you.

Only one thing now — Yesterday I examined a
plant common here, it is Croton alleghenicus Witt
and according to Mich. herbarium it is his Cr. mon-
anthogynum, which therefore can not be a variety
of Cr. maritimum. But it is no Croton properly speaking
male flowers. calyx 3 part. petal 3 stam 3 5 and 6
female flower cal. 4-5 part. 2 capsules 2 styles 4 stigmata
capsule 4 valved 1 seeded! Missouri, Illinois
and Arkansas — Tennessee (Michaux) — Croton
alleghenicus is an Asian name given by Vahl to a Java
plant. —

As our very [illegible] plant [illegible]
and Physocarpus opulifolius [illegible] for
propagation. [illegible] the Physocarpus with [illegible]
[illegible] on muddy banks of our large lakes
[illegible] [illegible] [illegible] [illegible]
the same as the [illegible] with [illegible]
is there no difference between the common Lythrum
and the large plant that grows [illegible]
our cornfields — the habitat is very different
being [illegible] [illegible] I will [illegible]
[illegible] often another [illegible] you get to them
[illegible] cut on [illegible] this. [illegible] you will
[illegible] plants [illegible] for other [illegible] except the number that
[illegible] Myrtle. The only one which we have here
is [illegible] very different from all the common ones
of [illegible] I have a complete set. It may be
called M. Dipsica [illegible] you have no mail
in Texas, either East?

[illegible] as soon as I can for you

Truly yours

J. Lapham

Dr. Osgood
New York

Pope
F. Peal R.

25-

BOSTON
AUG 23
10 AM

Gray Ma
care of Dr Gray
30 McDougal street
New York

Jan. 1 [illegible] 13 No. 1

My dear Doctor

I have written you about two weeks ago a long epistle with drawings etc. I have since finished my paper on Cusuta, the season being closed, and do not wait for your answer, as I have [illegible] of it [illegible] sent it to you by Mr Nicollet, who has been here on a flying visit. You would oblige me if you would look through it, and send it ~~with~~ perhaps with a few annotations and a recommendatory line from you to Prof Silliman. Could I get a number of extra copies, you will be kind enough to take [illegible] of them. The paper must however not be printed if Silliman is not willing to engrave the plates also. I [illegible] that to you.

In my last letter I forgot to mention a Pyrethrum, which I find here. I have given a full description in my letter in the package of plants but as that package, which also contains specimens of [illegible] has not yet come, I repeat it here, in case it should be new to you, and add a small branch, which you will find between the papers.

Pyrethrum deflorationum, or, as I cannot see the difference from Chrysanthemum, it may better be called Chrysanthemum deflorationum; folis pinnatifidis, ~~pinnatis~~ segmentis linearibus mucronatis, [illegible] in; caule a basi ramoso; ramis ~~pauci~~ floribus, capitulis ovatis, involucro hemisphaerico, imbricato, foliolis ovatis obtusis, margine membranaceis, fl. radii destitutis; achenii margine brevissime coronati; receptaculo nudo, cylindrico s. conico.

Common round St Louis in wastes, Cameron, fl. in May no smell. 6–8 inches high, much branched, always without radial flowers.

I believe that all the many different forms of Physalis, which I have found here and South must be reduced to 3 species 1. annual, 2. perennial with broad, generally cordate, light green leaves 3. perennial with narrow, generally more or less lanceolate, dark green opaque leaves. – Size of flower, of peduncle and even shape of leaves, and pubescence very variable. – Other Solanum for hybrid, may it [illegible] the same line too?

I have found here a number of Nuttalls Naslurtia and intend to pay more attention to them next year. We have tanacetifolium? palustre, sessiliflorum, sinuatum and Cornisiliqua as well as the natans.

Our Ranunculus aquatilis here, as well as the specimen collected west near Devils lake by Mr Geyer, are the R. divaricatus Schrank distinct from aquatilis by the long style, and the stiff, hard divisions of the leaves which are sessile — Aquatilis I have not seen yet here. — Out in Germany and England I have collected a Ranunculus which appears to be different from Aquatilis by the seeds, which are smooth, not hairy or bristly, only half as large, and globose; stigma sessile as in true aquatilis — It appears to me not described, and I have marked it in my herbarium R. leiospermus; it grows on the margin of fresh or saltwater ponds, and all the leaves are capillary.

Here I close my voluminous remarks today, and shall not trouble you again with bad writing before I have heard from you.

Truly yours

George Engelmann

[illegible] York.

Asa Gray M.D

care of Prof Torrey

31 Nassau street

New York

St Louis Octob 22d 1841

Dear Doctor

I am writing you to death I believe but I can not help it to add to the several letters which I have lately addressed to you a few lines.

I send you my Cuscuta in return and the Verbenas all the hybrids are certain except V. angustifolia — stricta, which may be only a variety V. stricta utrifolia which may be a hybrid of hastata and utrifolia and V. stricta paniculata which may be perhaps V. stricta — utrifolia. the others are certain not only from examination but also from the Gardeners Chronicle the parent plants.

I send you our Nasturtium's except your American, which is also common here, and one or two more yellow ones of which I am not sure are the four right?

Some other plants which I have collected this fall may be acceptable either to you or to the young gentlemen, who have presented me a New York plant.

Our Japanica rodiflora is very different from Jaudens specimens (west indian) in my herbarium. these agree with Sprengel syst II, 751. but not as we have not 3, but 4 Physalis here, but I have them not identified with the described species, 1. annua glabra erecta, 2, annua pubescens patens decumbens. 3. perennis, villosa patens. 4. perennis glabra [illegible] [illegible] patentibus.

Is Verbena diffusa perhaps my u. linaefolia - strictu? and what is speciosa?

I should like to get the following species, which I have not: V. caroliniana, diffusa, Lewisiana, speciosa, Lambertii, and hastata. If hastata is any thing but my variety of parviflora. As amongst 50 specimens Dr. Gray has hastata leaves, the same parviflora though later, must be retained.

Acanthus parviaviridis is hardly different from the genuine A. mauritianus except the shape of the leaves, no difference at all in the fruit.

I hope to hear soon from you, or else I shall deem my writings unwelcome to you, and must stop them.

Yours truly

Geo. Engelmann

Dr. A. Gray

New York

... I will send you ... all the ...
you have not got them complete ... or you sent
... — ... many more ...
... and should like to obtain all other ...
... a ...
...
... you
... ask you whether you have got a ... letter
... with ... which ... with ...
...
I ... it ...

... I must study again next season before
... and ... your plan ...
... I ... sound ... will that ...
...

... mix.
... the ...
I thought I had seen a ...
... collection in Berlin and which I ...

... is a name which I
... in our neighbourhood ...
I have never seen here only in written ...

... specimen and ...

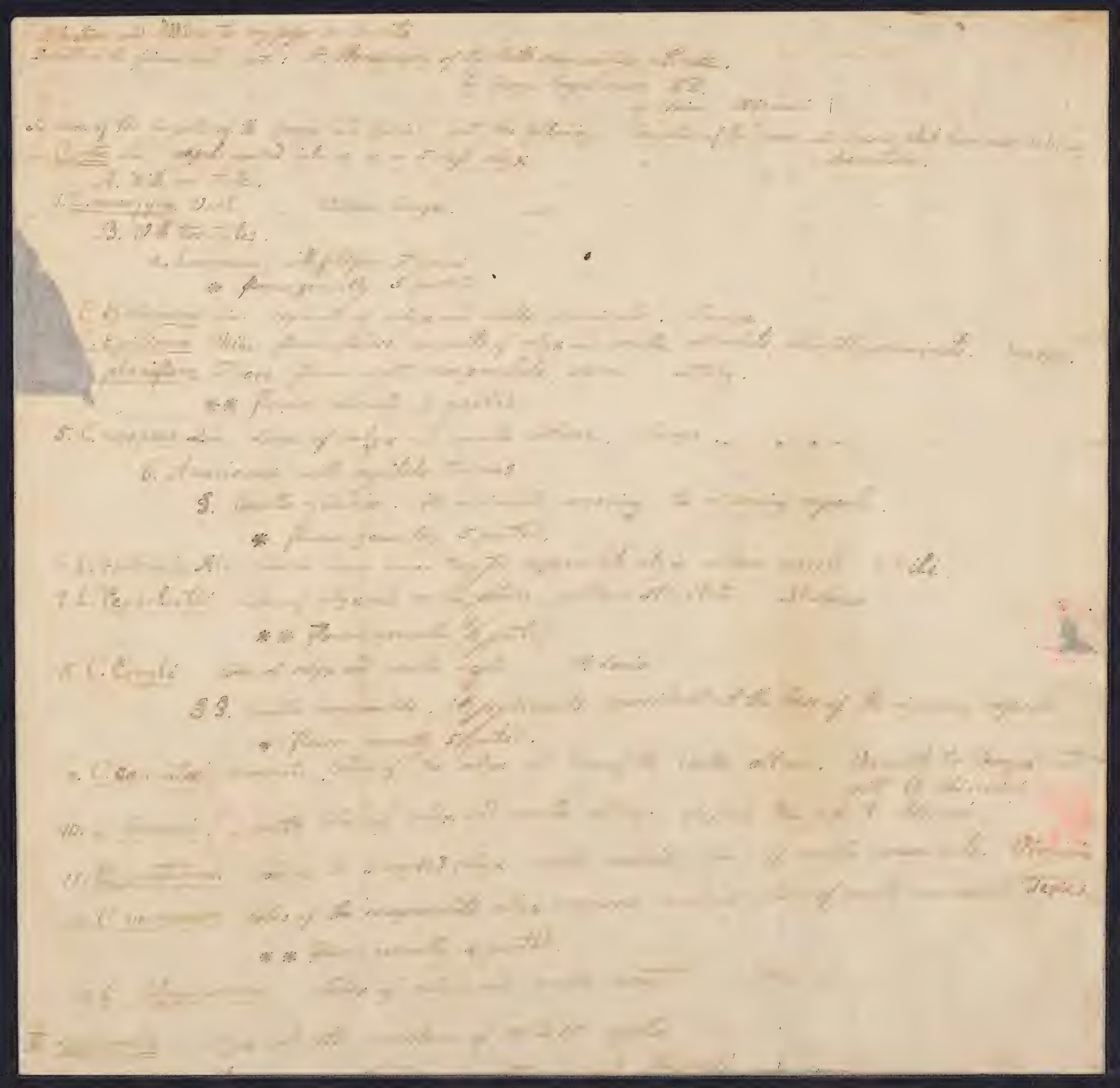
If you can send ... the ... of your ...
with much pleasure in examining them. ... had through ...
... this time, you have ... was ... we
... compare ...
... different; I should propose
... plants or ... in all together.
... the ...

... Shape of tree ... 24. Shape of leaves of ...
6. Shape of ...
7. ...
8. ...

... I ... 5 ...
of ...

If ... you ...

... all ...
altogether ...
plant.



[illegible] Dec 4th 1841

My dear [illegible]

[illegible]

[illegible] Hall [illegible]

[illegible]

[illegible] Schütze [illegible]

You will [illegible]

[illegible] Messrs Manning Foster & Co [illegible]

[illegible] Dr [illegible]

[illegible] Bentley [illegible]

[illegible]

[illegible]

[illegible]

[illegible] letter

[illegible] the post office.

[illegible] it ! —

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] of the plants

from [illegible] — may be that the [illegible] — [illegible] perhaps the [illegible] also ([illegible] — Some time they make mistakes in [illegible] gardens — a [illegible] [illegible] anoctonon [illegible] — [illegible] [illegible] in the U. States ! — [illegible] is not [illegible] to me — I think you [illegible] — [illegible] you [illegible] the [illegible] I have written to Washington about them. ? [illegible] is it with [illegible] [illegible] — [illegible] only a few [illegible] of [illegible] specimens ! —

Eupatorium [illegible] — Missouri & Arkansas. I have sent you with the [illegible] but [illegible] a strange form from the hot Springs, Ark. very small and narrow leaved, perhaps different — the only specimen I had ! Where may it be ??

E. serotinum Missouri & Arkansas

E. [illegible] — Arkansas, leaves [illegible] petioles 1/2 line long !

E. [illegible] 5 flowered heads ! Arkansas

E. album [illegible]

E. [illegible]folium — Illinois & Missouri, [illegible]

That is all I believe what I have to say at present. —

Only a few days ago I wrote you a long letter.

Our Azyobii [illegible] grows in [illegible] of woods, overflown places etc. — A. [illegible] has been collected by Mr Geyer in Iowa in open dry sandy woods, under white oak.

The Marsilea I found in your paper — without fruit !!

It may be identical with the Arkansas plant which has been described by A. Braun, of Carlsruhe as M. uncinata and is very different from M. vestita — I had seen the figure of [illegible] in Hookers works in Carlsruhe but neglected to examine or copy it then. The Marsilea from upper Missouri appears according to Braun identical with the Texan plant — and probably different from both Arkansas & [illegible] plants — would it be possible to obtain a small specimen — with the fruit [illegible] [illegible] to find it ??

Express my [illegible] — [illegible]

yours truly

[illegible] Engelmann

25

Dr Asa Gray
&
Lady
20 Washington st
New York

[illegible] [illegible] 8th 18[illegible]

My Dear [illegible]

I [illegible] [illegible] [illegible] [illegible] letter which [illegible] [illegible] [illegible] [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] that I [illegible] [illegible] [illegible] you [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the Gymnanthemum [illegible] [illegible] [illegible] [illegible] with my [illegible] [illegible] [illegible] you say [illegible] with the [illegible] [illegible] Gymnanthemum and my [illegible] [illegible] [illegible] that [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] that [illegible] [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] his [illegible] and that he [illegible] [illegible] [illegible] to New York to enquire himself but I fear that any enquiry through a letter [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] that [illegible] may [illegible] [illegible]

—— [illegible] I have [illegible] you last I have examined Prof. [illegible] [illegible] and some which I was able to hunt up here and in this neighborhood. — I had occasion to [illegible] all my specimens [illegible] [illegible] [illegible] by you, and am [illegible] to say [illegible] [illegible] to make [illegible] [illegible] [illegible] this [illegible] [illegible] [illegible] [illegible] the [illegible] of my former observations [illegible] for the distinctness or stability of the species which I propose. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

though the extreme forms are certainly very distinct.

As at present advised I would refer your specimen from western New York on Decodon verticillat to C. Saunii and not C. Carinata — and also Mr Carey's specimen from Georgia — The C. [illegible] tetramerus is certainly very singular & may prove on further investigation a distinct genus. C. Cephalanthi is generally a [illegible] — Finally I had occasion to examine a specimen from the Sioux [illegible] that grows [illegible] Little [illegible] I [illegible] from [illegible] of the State of [illegible] The following changes:

[illegible]

10. C. [illegible] [illegible] as the N. [illegible]

13. C. Saunii [illegible] of the coast of the United States

14. [illegible]

In the description of the Species you please make the following changes.

C. Cephalanthi flowers mostly 4 parted

C. Conyli grows in hazel thickets in Prairies and barrens Illinois & Missouri

C. [illegible] [illegible] of the [illegible] say. Var. α appears to [illegible] — [illegible] — [illegible] (Hort) — [illegible] (Hort) — [illegible] (Hort)

at the end of the article strike out the last paragraph, beginning "the Specimen from Georgia — — to, refer it to this species

C. Saunii add to the locality: this fall, sept. 1841: Subsequently I had occasion to examine specimens from Western New York, on Decodon (Dr A. Gray) from Western Pennsylvania (Dr Lea) from Kentucky on Polygonum (Dr Short) and from Georgia (Mr Carey).

[illegible]

They flowered with us at present. Can you obtain a supply of Cherokee rose seed? You will also do me a personal favor by sending me the list of Bitter or Extra [illegible] I have sent my copy to Texas and must have them. Bring this to tell you flora is finished — Any thing you have or see you may send by the Post Boat not go as I understand that we sends a box of goods or some [illegible] — but if you [illegible] will that be an extra opportunity [illegible] offer by the steamer [illegible] the manner of [illegible] I [illegible] make [illegible] of you [illegible]

[illegible]

Eaton Manuel

Single

Dr Asa Gray
care of Mr Torrey
Dr Dugal Street
New York

[illegible]

Dear Doctor

[illegible]

What has become of the [illegible]

make no [illegible]

2.

drawings only as large as [illegible]

[illegible]

[illegible]

Please not at [illegible] as soon as you [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

St Louis March 20th 1842

My Dear Doctor

It is long that I have not heard from you, though I have no doubt, it is owing to the great labour of finishing satisfactorily the Compositae. And I would not address you just now — especially as I have already sufficiently bothered you with the Compositae — if it was not in order to give you some data about Compositae which may be interesting to you.

The other day I got from a friend, who collects for me in Texas, Mr F. Lindheimer, A beautiful Collection of plants from there. Specimens as complete as you seldom see them about the same as Geyers plants from the Upper Missouri — Many are new to me, but undoubtedly already known through Berlandier or Drummond. Some I can not find in DeCandolle's Prodromus. And one ought to be already in your flora, if I am correct, as it is not there I consider it new; though it is possible that I may be widely mistaken, for I have not paid great attention to the Compositae, and the niceties of their distinctions as yet. The genus I believe belongs to Vernoniaceae and to the division of Elephantopeae and I suppose the species of Elephantopus with folia triplinervia E. virgatus — De Prad must be something like this plant — It is distinguished however from the Elephantopeae by having an angled and not compressed involucrum and by not being exactly few flowered.

I send you in the collection which you will soon receive, a specimen (a branch of my only specimen) which you may keep; in the letter I will put a small branch and leaf, so that you may judge of the correctness of my surmises. If you agree with me, to consider the plant new, I should be delighted to see it, if you would give it the name of one of me or mine sister and a lisper and an enthusiastic admirer of nature.

...ful collector of plants and insects.

Lindheimeria

Capitula aequiflora pluriflora (16-18 flora) corymbosa. Involucrum 8angulum foliolis carinatis, apice ~~carinatis~~ coloratis laceris, 4 exterioribus latioribus, 4-5 interioribus angustioribus. Receptaculum alveolatum nudum. Corolla limbo profunde quinquefido palmata (?). Filamenta laevia. Styli rami subulati pubescentes. Achaenia 4 angulata nervosa pilosa. Pappus 1 serialis, paleis 8 ovato-lanceolatis acutis, serrato-ciliatis.

Herba exana perennis, strigosa erecta. Folia trinervia inferiora opposita. Corolla violacea.

Lindheimeria texana caule erecto ramoso infra glabriusculo supra strigoso-scabro, foliis petiolatis lineari-lanceolatis integerrimis, trinerviis strigosis scabris, inferioribus oppositis, superioribus alternis; capitulis pedicellatis corymbosis, pedicellis glandulosis; involucri foliolis asperis apice scariosis laceris coloratis (violaceis); tubo corollae involucrum superante limbi laciniis linearibus acutis breviore, achaeniis involucrum aequantibus.

Seeds of Buffalo bagoe near Houston Texas, October 1841

Lobelia texana Raf is amongst these plants and easily distinguished from L. cardinalis, especially by the long linear lanceolate acuminate lobes of corolla.

Last year I have found Donia squarrosa in abundance on the river bank near town.

I believe that your Genus Linum must be entirely remodelled. I have one from Texas and one from Arkansas undescribed by you; and the Linum Lewisii is very distinct from L. perenne, more near L. austriacum, but also distinct from that. I have all three from their native localities.

I shall send you a number of Compositae from this texan Collection, which may reach you before you finish your next number of Flora, and be perhaps of some service to you; of them, the Lindheimeria I can spare for you. But you may keep the others till next fall. If I then get duplicates, you may keep them, if

On the next page I have made some notes which may be interesting to you; texan & etc —

...brosia, which I have called incisa and which Dr Gray has also pro... Coast ... I don't ... its name ... I have also from Galveston Isle & (F. Lindheimer) ... from the same place Borrichia fulescens and Liatris mucronata DC (always 3 flowered!) and Erigeron scaposum DC also an Iva, probably I. asperifolia Lessing (in nasum Vemony) All these plants are from Galveston Island. The following are collected in the neighborhood of Houston, all by F. Lindheimer Gnaphalium polycephalum — Solidago gramminifolia — Inula scabra Is the Obelisaria not new? It is not in Decandolle at least. I should like to see it named after my friend, Obelisaria (or as all other Compositae have been divided Lindheimeria) quercifolia — Aromella repens — Chrysopsis argentea — Marshallia angustifolia Helianthus tenuifolium (under what name has De Candolle this plant?) Liatris mucronata — Solidago aciora.

It may be interesting to you that in this Collection there is an Amorpha which does not agree at all with your A. carolinana, but with A. glabra Desf — so that I can not see how you say in the appendix that they are the same fide herb DC. — At least if the lowest pair of leaflets being distant or approximate to the stem is an important and specific distinction.

Stem, leaves and calyx very glandulous; leaflets 8-9 pairs elliptical, mucronate, petiolulate. Stipule and stipels setaceous, lowest pair distant from the stem 1 to 1½ inch. Calyx glandulous, villous at the mouth; 4 teeth short, one acuminate.

I expect to get more specimens next fall and then you shall have them. —

Among the plants which I do not see described in the older books at least, are two monardas (by the way is Monarda hirsuta and ciliata not yet separated from Monarda — they are certainly another genus. What does Bentham say, the calyx is entirely different.) A Euchroma which may be called indivisa, on account of leaves and bracts being always undivided! — A Lythrum which I call foliosum similar to virgatum, but the teeth on the calyx never reflexed.

Amongst the Compositae is also Chaetopappa which I have also collected in western Arkansas. Decandolle's character ought to be modified: Capitulum multiflorum (12-16) radiatum; fl. radii 1 serialibus foemineis ligulatis (7-8) fertilibus disci hermaphroditis (sterilibus) 5-8). Recept. angustum scrobiculatum nudum. Involucri (octagoni) squamae laxe imbricatae, exteriores acuminatae, interiores margine scariosis ciliato fissis. Pappus floralis ~~exterior~~ fertilium duplex, externus pilosaceus, paleis fissis interior quinquesetus apex; Achaenia pilosiuscula. Pappus flor. disci sterilium simplex, pilosaceus; Achaenia sterilia stipitata glandulosa — receptacula.

I was just about closing this long epistle when I got your letter from March 3d — 16 days on the road — beautiful, post office arrangements! — I am glad to hear that you are well again — but you should not work so hard that you injure your health. — It would be wrong to give you any more trouble and work — and I would even suppress this letter, if it did not contain mostly notes of Compositae, which may be immediately interesting to you. At all events you must pardon me with troubling you in this way — but I do not expect letters from you unless you can write conveniently and at your leisure. About the Cuscutae you do as you please.

Dr Asa Gray
Care of Prof Torrey
30 Mt Pleasant Street
New York

There is no botany taught in our medical school, and very little of it in the college; but I have heard it said, that it is intended to have a professorship for it created. I will do what I can to have your work introduced wherever they will pay any attention to botany — and with so much more pleasure, as I am confident of its value even before I have seen it. I do not expect an answer now — but let me immediately know if you please when you have received the collection — only a few lines! —

Very truly your J. Engelm

St Louis April 26th 1842

[illegible]

My dear [illegible]

A few days ago I sent a box with plants to Messrs Poppe [illegible] marked 92 for you. You will find in that box parcels for [illegible] containing amongst other things some Carex [illegible] [illegible] the Carey which you will [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. There is also a small parcel for the [illegible] [illegible] [illegible] and one for the [illegible] [illegible], which I wish you to send by the next opportunity and one for Mr. Curtis which you will do me the favour to [illegible] forward to Newyork & Raleigh N.C. [illegible] [illegible] [illegible] or any where else, just as you think best, as you have more communication with him.

Now you will have some expenses on the bundle and I must request you either to charge me with them or the gentlemen [illegible] [illegible] the [illegible] [illegible] whom the different parcels are directed. I don't know how that [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] you [illegible] [illegible] [illegible] the expenses.

Mr Curtis sent [illegible] [illegible] [illegible] [illegible] [illegible] Cuscuta, from N. Carol. & Massachusetts, both

on the C. carinata

Did I ask in my last letter whether you could obtain a small specimen of a [illegible] collected by Dr James at the foot of the R. Mts [illegible] it ought to be different from any we have here.

In the parcels you will find an Astragalus which I had doubtfully considered like A. trichocalyx but again examining the plant this spring I am perfectly satisfied that neither Nuttall's description is any account, as this is an undescribed species. The stipules are certainly connected together and with the petiole, and it ought to belong to the section Caprini DeCand. prodr. II. 281 and appears to be analogous to the German A. exscapus, but still more so to the A. longiflorus Pall. (same fruit?) The fruit reminded me to put it amongst the [illegible]. It might be called A. edulis; I have tried the young tender fruit, and find it equal to young beans or peas, prepared in the same way. The plant grows here abundantly, and I have other specimens from several parts of the Interior of this State. — As you have seen specimens of A. trichocalyx or mexicanus you can decide; but shape and insertion of stipules, shape and proportion of calyx teeth should distinguish it — how is the colour of flowers of A. trichocalyx? Ours is white, cream with bluish tip of carina — always!

Mr Curtis writes me that your 6th number is out. Do send it to me by mail! and continue to do it with the succeeding number. You are always sure for [illegible] of Mrs. Gray.

It is very long that I heard nothing of you. Did you receive my last letter in November? I forget that you are an intimately busy just now, and ought not to trouble you. [illegible] I expect you will get by the beginning of May, when you have a little more leisure.

Truly yours

George Engelmann

Dr Gray M.D.
New York

Send [illegible] thanks of your Elementary work

With the parcel St Louis June 22d 42

Dear Torrey

As an opportunity offers, I hasten to select some plants for you and make a few remarks which may or may not be of any interest to you. My time — summer season — heat — sickly — and so forth — does not permit me to make any examinations of plants and so forth myself — and a good many notes, which I have made formerly (I had them in Newyork with me are still on the Ocean or the heaven knows where — together with the paper on Chara to select plants for the young gentleman who has been so liberal to me (on your instance) is at present out of my power; But next winter if I live I will and can fulfill every reasonable expectation. Most of the plants which I send you I wish you to return, as they are the only specimens those which you may keep I label on gray paper, with my name printed to it. If they are interesting to you, please retain them if not, you may give them to the gentleman alluded to.

Now a few remarks, as I go along.

Artemisia — Manitou Island — on this plant roots I found Orobanche ramosa! the Mother plant of O. uniflora I could not discover and Epiphegus virgin. evidently grows in rotten wood (exactly as the European Ophrys nidus avis)

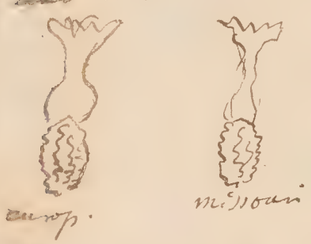
Artemisia ludoviciana, the common form is ~~common~~ in abundance near St Louis on a few places, but not commonly

Synthyrium? Texas has much the appearance of the European S. reniformis, pity that the only specimen is so incomplete. I have not examined it, if there are any paleae I leave that to you.

Synthyrium deflorentum I propose to call it on account of the constant absence of Cyclate flowers

I can not find any thing like it described — It is really without smell. — It is in full bloom by the latter part of May and several weeks before the Anthemis Cotula. —

Anthemis Cotula. I send you European and Missouri specimens — one of these nearly destitute of ligulate flowers, as it is sometimes found amongst the others. — There appears to be a marked difference between ours and the European ours is larger, stouter, generally hairy ~~rays~~ disc'd flowers ~~more~~ numerous and smaller and not so ventricose at base; but in the fruit



I find no difference. — The most striking difference is in the habitus of the plant. —

in going along I make occasionally a remark relating to plants which prove not necessary to send. I will enclose those remarks so that you need not look for the one accompanying specimen —

[Polymnia canadensis and Uvedalia near St Louis]

[Nuttallia amplexifolia fort Gibson Ark

Silphium pinnatifidum? or perfoliatum? the same in Arkansas

besides the species of Silphium which I send you we have only the ~~three~~ three and the gummiferum here

[Bellis integrifolia western Arkansas and Texas]

Coreopsis tenuifolia? the same in western Missouri, as in Arkansas

[Is the Eupatorium which I collected in Arkansas — you have it from Berlin — really E. hyssopifolium?]

Of Eupatorium I send you a few specimens to verify the localities —

Eup. pubescens Arkansas, I have not seen it in Missouri.

Conyza camphorata never in Missouri, but common in Arkansas & farther South

Is this Liatris punctata? and the same with the Plant of Nicollet — compare the pappus!

As you are through with the Asteri I will not trouble you with them at present. —

Chrysopappa asteroides all the specimens which I have examined have only the radial flowers fertile — the disc'd ones for sterile pappus scaly and setose

I have the same plant from Texas

Boerhaavia denticulata, n. spec. — different from glauca by the denticulate leaves and of cuspidatum by the calyx

[Lactuca graminifolia, Arkansas]

[Cnicus Pitcheri on Manitou Island, Lake Michigan August 1840

Gentiana Pneumonanthe? rather different from the European Pneumonanthe, intermediate between this and the angustifolia? — apparently the same as No 233 of Nicollet's collection

[Echites difformis Arkansas

[Acanthus longifolia & viridiflora, St Louis

[Near St Louis: Asclepias purpurascens, Spiranthes amplexicaulis, obtusifolia, incarnata, tuberosa, verticillata — connivens? rocky parts of the State; A. quadrifolia Arkansas: pauciflora? variegata

[Gonolobus ~~caroliniensis~~ viridiflorus, in Arkansas, hirsutus also in Missouri

[Podostigma viridis, the largest flower of any Asclepiad we have here, in Missouri, Arkansas & Illinois

Astragalus bisulcatus ? appears to differ from Pattie's plant by the ~~[illegible]~~ flowers with the purple tip of carina; very short teeth of the calyx & ship the which were pretty to the petals

? Celastraceae — that is all what I can tell at present of this very pretty shrub — two feet high — a full description I have in my notes which I can not get at now. — fruit unknown but I can hardly doubt the correctness of referring it to the above named family. —

[Salvia lyrata missouri, Arkansas Texas

[Dracocephalum Moldavica in the interior of Missouri — for Gardens ??

Monarda muplericulis Osb — the earliest by 6 weeks of any of our monardas sometimes in flower by the end of April — besides this we have here only M. oblongata — ciliata and hirsuta. and in Arkansas punctata and "Bradburiana

[Mentha borealis and canadensis is — the male and female form! — both are fertile and both have fertile stamina, but in the one the corolla and stamina are more developed, and the stigma smaller in the other the female parts are more developed at the expense of the corolla and stamina and anthers. — The same take place in most of the European mentha's and has created much confusion and many unjustifiable new species. — The same can be found in other Labiate etc

I send you seeds of three Osmodiums — That of Manitou Island is most remarkable — I mean and St Louis are perhaps the same — but the true molle I have probably not seen

[Batschia Canescens & Gmelinii in Texas

Hydrolea spinosa & quadrivalvis Arkansas

St. Louis [illegible] [illegible] 184[illegible]

[illegible]

[illegible] [illegible] your letter of the [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] and [illegible] [illegible]
[illegible] [illegible] [illegible] with [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] the kindness with which
you think of me, whenever you [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] and sent to Silliman [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] a splendid specimen [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] from
[illegible] [illegible] [illegible] something [illegible] and [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] hemispherical shape, [illegible]
[illegible] [illegible] [illegible] [illegible] turbinate. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] — Lindh. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] probably [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] that [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] length of styles
[illegible] [illegible] variable in [illegible], [illegible] and [illegible]. I have
[illegible] with short [illegible] and long exserted styles! and all
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] of the [illegible] or [illegible] [illegible] [illegible] [illegible]
[illegible] the [illegible], therefore I [illegible] [illegible] [illegible] [illegible]
[illegible] it may be C. [illegible] or C. [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] probably the
[illegible] [illegible] [illegible] [illegible] with [illegible] style (C. [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]) [illegible]
[illegible] [illegible] of these doubts [illegible] [illegible]
[illegible] [illegible] [illegible] to [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] a [illegible] [illegible] of [illegible] [illegible]
[illegible] [illegible] [illegible] more [illegible] (except [illegible]
[illegible]) [illegible] [illegible] [illegible] [illegible] in kind [illegible]
— C. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] C. [illegible] [illegible] [illegible] [illegible] [illegible]

of it. — The C. monantha of Nuttall there is
[illegible] but the name you say
is preoccupied. — I should call it therefore
C. [illegible] and you would oblige me by
[illegible] that name on authority for the other.
This genus Calia was applied in two meanings
1. the plant associate with a great many different
plants 2. it is common to all North America.
Thurber's (Lewisia? in Oregon — Mrs Nuttall name from
Oregon or California?) — if the capsule has not finished
the plate to have it called L. vernon from U to V shape of calyx.

I have found here this spring Fedia radiata no other
but you are not quite correct when you say that no foreign Fedia
has a resemblance in fruit with this one. The German Fedia
cornuta is very near our radiata and the fruit can
hardly be distinguished. The habit is very different
[illegible] of flowers; you find F. cornuta amongst the plants
we have to go, which have arrived by the [illegible]
in Southern deflorations. Often is Decandolle's Metricaria
discoidea and probably also Nuttall's Lepidanthes microcephala etc.
My Rumex angustifolius I have now also from Texas; it is
also undoubtedly described — works which I have not seen.
I have another Rumex not to be found — they books from here and
New Orleans — but I am unfortunate in describing new
plants and will give it up for a time! — My Linaria
texana is a Pelaforia, probably P. texana; but
how the styles permit it to be separated from Vemonnaea
I do not see — but it appears I have no eye yet for
Compositae! — I see however Decandolle and you are
not of the same opinion about the place of Pelaforia. —
Is any thing more of the Prodromus published since 1840?
will it be completed? — As my Linderniaceae is
in go I should like to give the name of my very
enthusiastic friend who has send me again a large collection
of splendid and splendidly preserved Texan plants of
which you shall have your share too. — to send other
plants — [illegible] as the opportunity offers. I should like to
see the Linaria elliptica; if [illegible]

Does it come up to all of Kellettia or a Kellettia
[illegible] I think it have a little right to keep the
the plant was it been [illegible] since it appears
always separated from Croton proper. I doubt that
the 4 valved capsule should establish its generic
difference from Croton; Nuttall is not quite correct in his description
of gen. an. but certainly has the same plant in view
and it is C. monantha gray Mx! but the name is too
barbarous and also incorrect to be retained, if
you think justice to Nuttall requires it call it
Lidbeckia monantha gray. If you object to the
generic name (and I should not like to see it adopted
if the genus is not certainly distinct, or perhaps called
by an other name) I shall write to my friend to
[illegible] himself and [illegible] it up a [illegible] of his
[illegible] a difficult job though [illegible] carefully!
and [illegible] appear to have collected carefully!
What do you say to our Gyrdelia? it appears to
G. [illegible] [illegible] fast hold here on the rocks
[illegible] name of Eleutherococcus polifolius
by Decandolle, Cissus polif. Lin. a German plant?
[illegible] Peppers from Galveston appears to be the Texana. If [illegible]
[illegible] the same mistake appears to have
[illegible] A. spinulosus.
Is the Helianthus angustifolius? Texan which [illegible] but
different from the true angustifolius. If I was properly satisfied with
my knowledge of our Helianthi I would say it was
[illegible] call it resinatus from the [illegible] or resinous [illegible] leaves
[illegible] (not purple) [illegible] [illegible] [illegible]
[illegible] side of [illegible] smooth (not
[illegible]) [illegible] (not half as big) [illegible]
[illegible] of [illegible] purple.

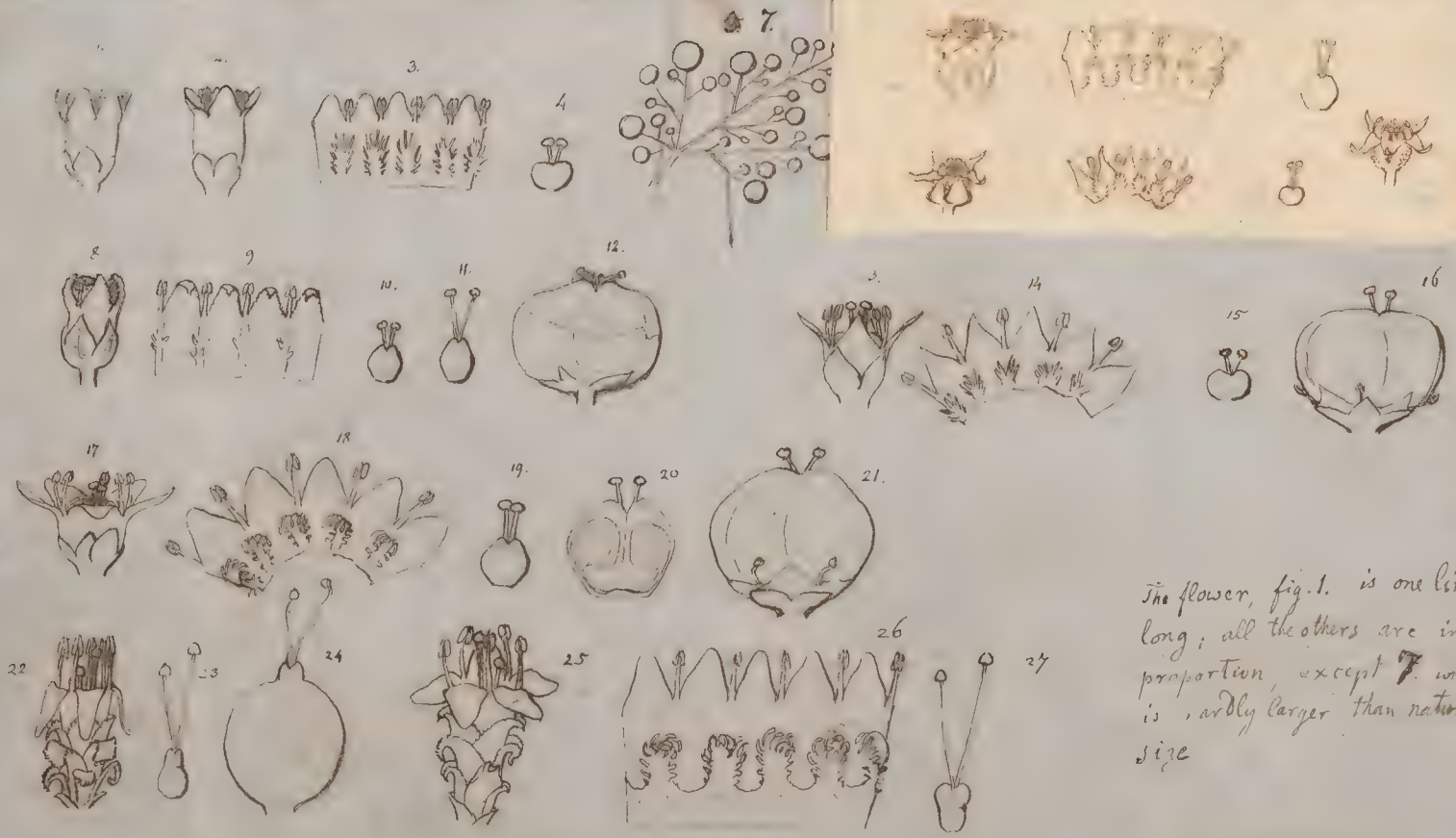
There are Drummond and Berlandier's Texan plants described
I get so many now and undoubtedly many new ones, so that
I should like to work them out
I have now 2 new Ranunculus 1 gelin (an annual) 1 Geum
1 Clematis 1 Melica 1 Sporobolus 1 Cirsium 1 Lactuca
1 Euphorbia 1 [illegible] 2 [illegible]

a Euphorbia (one like arizgeta) — there but many may be already described; for Remedios etc. I think I can be a guide — but for the manifest [illegible] I will have. But for I should like to see the Cactus fruit. Perhaps all perhaps send you a letter, if the manuscript is still in your hands. — If I can find Mr Gibbs or by the first opportunity I shall send you Texan plants, especially compositae — the Coreopsis Cornuta & grandiflora will delight you! — There are C. grandiflora white some, even, if only a few lives.

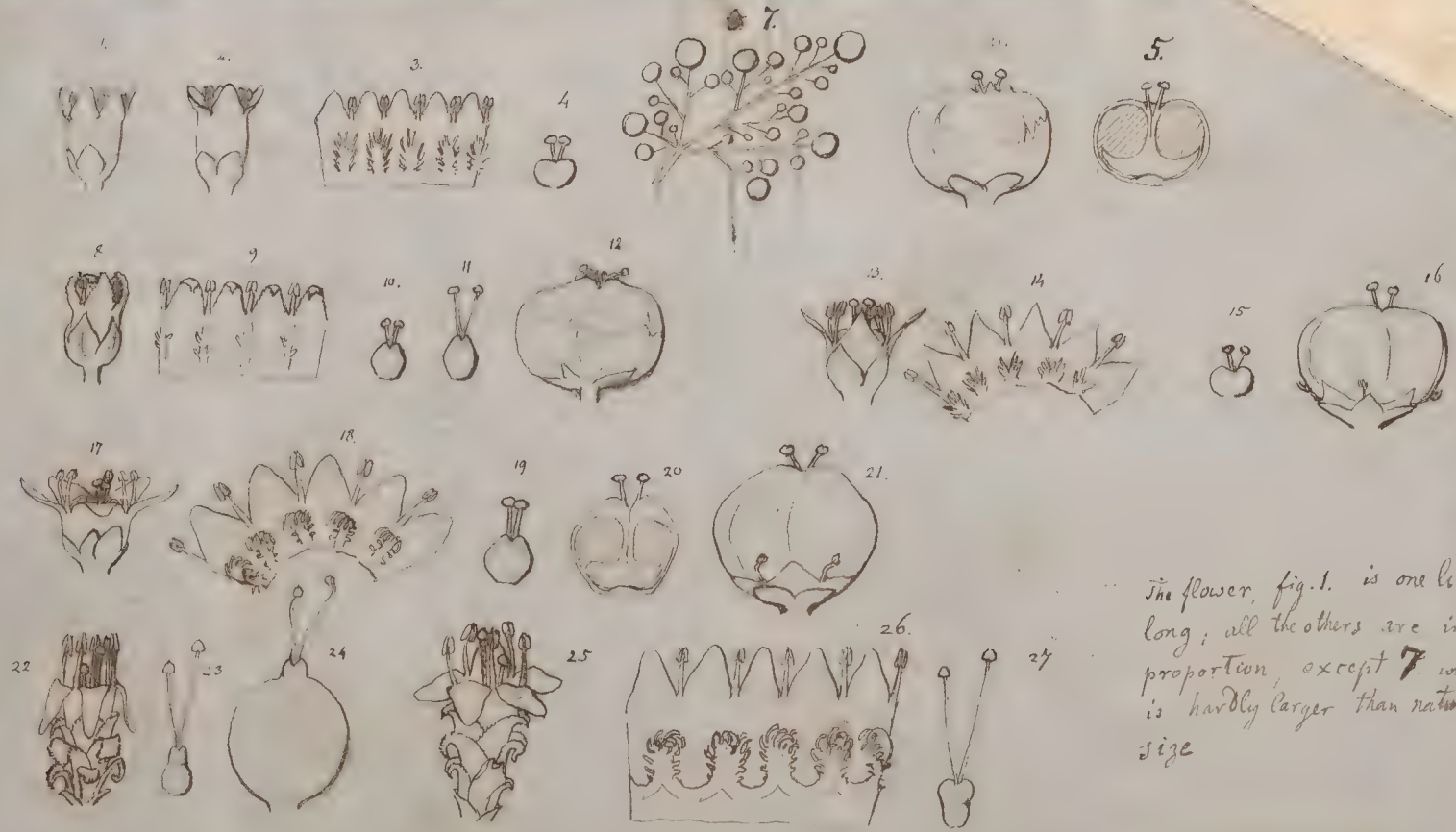
Yours affectionately

I shall send you Texan seeds next Glycyrrhiza fall etc. such from here as you may want. I am glad of your increased sphere of action

Asa Gray
Prof. Bot. Torrey
Mr Sec. A. A. A. S.
New York City



The flower, fig. 1. is one line long; all the others are in proportion, except 7. which is, vrdly larger than natural size



The flower, fig. 1. is one line long; all the others are in proportion, except 7. which is hardly larger than natural size

The Cuscutineae of the vicinity of St Louis, Missouri.

by George Engelmann M.D.

During a residence of nine years I have collected in this neighborhood several forms of Cuscuta, which appeared to me different species; but neither the books which I consulted, nor the botanists, whose opinion I requested could give me satisfactory information. During a tour in Europe last year I met the same difficulties; I found in different collections different species, some of them communicated by myself, but nothing further was elicited. So I examined the genus, or rather the tribe, for there are two genera, myself, the living plants as well, that I could lay hold of, as the dried specimens in my herbarium, and was astonished to find from 5 to 6 different species, where only one, the Cuscuta americana was noticed in the books. I offer [illegible] to the botanical public in the expectation, that their attention may in that way be directed to this neglected tribe, and that in other parts of our wide spread country other species may be discovered.

I take this opportunity to request botanists to communicate specimens of Cuscutas (with their parent plant) to me, as well as other rare plants of their region, and offer in exchange to them european (german, french and swiss) as well as the rarer plants of this neighborhood.

Order Convolvulaceae, Juss. — Tribe 2. Cuscutineae, Link.

~~Fam. Convolvulaceae Juss.~~
~~Tribe 2d Cuscutineae Link.~~

Leaves scaly; Embryo spirally rolled around a mucilaginous albumen, without cotyledons.

This remarkable tribe is ~~attached~~ appended to Convolvulaceae and bears to them just the same relation which Monotropeae bear to Pyrolaceae, and Orobancheae to Afirrhineae: they are the phanerogamous fungi, destitute of verdure and proper leaves (in whose place they bear scales, but are never leafless in the proper meaning of the word), while they agree with the higher organized plants in the structure of their flowers: an exertion of nature which we discover [illegible] in the animal kingdom in the Entozoa. And to Entozoa the class of plants of which we are speaking, bears another striking resemblance: they are parasitical on other plants; the Cuscutineae on their stems, most Orobanchae on their roots and the Monotropeae on their mouldering remains. As we call that class of animals Entozoa we may call these plants Epiphyta growing on Plants.

The Cuscutineae are distinguished from the other Epiphyta by their growing on the stems and occasionally the leaves of other plants, and by their large

seeds which resemble very much the seeds of Convolvulus; Monotropeae and Orobancheae have extremely minute seeds, in some respects similar to the spores of acotyledonous plants. The large seeds of Cuscutineae are easily examined and present an embryo which is spirally rolled round a mass of mucilaginous glutinous albumen.

The Cuscutineae germinate in the ground, but soon find the plants round which they climb — and they climb constantly to the left, as all Convolvulaceae do — there they strike their papillose roots in the epidermis and draw their principal subsistence from them. Their stem soon withers and leaves the upper parts entirely parasitical on the parent plant, whose stinted growth frequently proves the exact it suffers through the withdrawal of nourishment by the intruder.

Similar to the Entozoa where the same species is always found in the same or a nearly related animal, so the Epiphyta generally grow on the same or similar plants. This is more constantly the case in the Orobancheae but it holds good also in the family which we consider are. But Orobanche strikes it root in the epidermis of its favorite plant and continues there, Cuscuta however germinates in the ground and twines afterwards around the plant which is to give it sustenance, and it frequently twines round all the plants in the neighborhood and knows to extract from them its food. Some of the species are more constant in their predilections than others. so for example the European Cuscuta Epilinum never grows on any other plant but flax and the Cuscuta Compositarum is always confined to Solidago Helianthus and some other Compositae. Some others live promiscuously on most plants they can reach, so the European Cuscuta Epithymum or the American C. Polygonorum. Nevertheless they are rarely ever found where the plant they prefer is not in the neighborhood.

I have therefore ventured to adopt the nomenclature, which some modern botanists have used in designating the species of Orobanche naming them after the parent plant: Orobanche Galii, Eryngii etc Cuscuta Coryli, Cephalanthi etc. thereby designating an important moment in the history of the plant, and facilitating the examination of specimens.

Before I proceed to describe ~~our St Louis Cuscutae~~ the Cuscutae of St Louis, I will give a short conspectus of all the species which I have had occasion to examine.

2.

~~Cuscuta Cephalanthi~~ 1. Cuscuta Cephalanthi, n. sp.

Stem [illegible] (after flowering ventricose), twice the length of the oblong spreading segments, and cylindric [illegible] ovate oblong tubes of the calyx; [illegible] tube of the corolla [illegible] stamens shorter than the limb; scales ovate, lacerate, nearly depressed; styles equal to the depressed ovary, caps le depressed, covered by the remains of the corolla.

var. β. macrostyla; styles [illegible] as long as the ovary, flowers [illegible] sessile conglomerate.

var. γ. Gymnosa; capsules [illegible] the corolla [illegible] at the base of the capsule.

On Cephalanthus also on Veronica, Aster, Boehmeria, and other plants in the neighborhood of Cephalanthus, near St Louis July – September.

~~[illegible]~~

This is probably the Cuscuta americana of Linné and most other botanists. But their diagnosis is too incomplete to decide this point. Linné says (Syst. veget. 180): Cuscuta floribus pedunculatis. Mill. Dict. I 115: Cuscuta floribus pedicellatis pentandris. Lion I, 116 C. fl. pedunculatis sessilibus quinquefidis. Other botanists add: stigma capitate. Muttall (Gen. II addit.) says: flowers mostly pentandrous and sessile, and Spreugel (Syst. veg. I, 864) brings Cuscuta americana to the section with glomerate subsessile flowers. The figure of Sloane (Hist. I. t. 128 f. 4) which is cited by several authors I could not compare, but it represents a plant from Jamaica and may be quite different from ours. On account of this uncertainty and because under the same

roundish obtuse, rarely with a little point, covering only the lower half of the tube. The tube itself is in the young flower perfectly cylindrical, but immediately after flowering it swells below in the enlargement of the Ovary and may be easily mistaken for an urceolate tube. The ~~lobes~~ lobes of the corolla are ovate, obtuse, somewhat auricled at their base and campanulate or spreading, half as long as the tube but longer than the stamina. The corolla is membranaceous, not fleshy. The flowers are mostly 5 parted, but the last ones of the season are 4 and even 3 parted. The ripe capsule separates easily from the calyx, apparently without bursting open.

The variety γ is distinguished by the much looser inflorescence and the rudiment of the Corolla remaining at the base of the capsule. The situation of the dry corolla in relation to the capsule is in the other species so constant and characteristic that I incline to think ~~that~~ there may be distinct species hid under this variety. Shape and proportion however of calyx and corolla agree entirely with the specific character.

2. Cuscuta ~~Polygonorum~~ Coryli.

Stem twining, flowers pedunceled subumbellate, mostly 4 parted, tube of the corolla cylindric equal in length to the acute segments of the calyx and the ovate acutish crenulate inflexed ~~segment~~ lobes of the corolla; stamens a little shorter than the limb, scales bifid, consisting of a few teeth only, adpressed styles as long as the ovary with the stylopodium; capsule depressed covered by the rudiment of the corolla crowned by the stylopodium and the reflexed styles.

var. β. stylosa Styles much longer than the ovary exsert.

St Louis July 25th 1842

My dear Doctor.

Any thing which you have for me, Dr Brown, the bearer of these letters will take with him; I have nothing at present for you but wd. to come; a small parcel has been taken from here for you a week ago by Mr Torrey (of the firm of Kimm & Torrey) and if you have not got it — in the Copper — then you got the box. — Let me know how you like the plants — what you have to say about them. — After you shall have told — I shall my note — To — the — you — to me you thought — that they.

I — with a — of interrogatories put to Pursh, e.g. — Pursh — ? Fl. Am. 2. p. 77. — Not to C. — e.g. C. caulescens Elegr.? in Pursh. Fl. Am. ibid.

I believe that to be the true relation of both plant though I have not the parts with.

I have for — reason entirely plant the season. e.g. — the Orchis — they — not — have said — to this.

Polygonum: I have sent you one with — this green pendulous spike and flow — pretty — that is very common here, more so than the Sparganium, which has erect spike, interrupted, more

and no axillary ones; — both acrid leaves, — glandulous flowers. — this one is certainly P. punctatum Ell fl. 8 and r. — the first one is very near P. hydropiper L. fl. 6 and r. 2-3 ft. In no work I see the two hydropiper mentioned should it not be east? — [illegible] a have a very miserable [illegible] I can not compare. — Ours has a 2-3 angled fruit with blunt angles and convex opaque rough surfaces — this may be the difference of ours and the europe. hydropiper which Sullivan has smooth shining seeds, concave surfaces, sharp angle; but I am not quite sure. Send me a sample if you have — there appears to be no other distinction and if may be the american form of the europ. plant — a geographical variety, not impossible would make be the more probable [illegible] you say? the Mississippi Valley at east. —

Verbenas I am studying now, and find more hybrids! I shall send you a large quantity of forms. they are very interesting indeed.

I believe I have a hybrid between Aquilegia canadensis & obtusifolia also and Polygona may possibly furnish more hybrids! —

The small Nasturtium which I send you last fall as tanacetifolium is most probably obtusum Watt, and entirely distinct from N. palustre

As soon as you say, I will collect rare seeds for you and get texans for you. Have you already in Charleston

I am very glad that a seem of one of letters hold of Mr. [illegible] tant they for the study of botany as such a garden. I long to visit you and see the long rows of Asters and Solidago's and of hybrid Verbenas, Astragalus etc. —

By the way I have from Texas an Astragalus which I forgot to send you very similar to your A. distortus but besides other flowers fruit very much articulated, not smooth &c. I am in a hurry therefore excuse me but write soon.

I received with pleasure a few sheets of your Flora manual; and shall be glad to get the whole when finished. —

Please to give to Dr Brown a copy, if finished; also 1 copy of flora II, 1 and 2 and 1 copy of flora II, 2. he will defray the expenses. — Also my plants you might have.

Yours truly

J. Engelmann

the extreme [illegible] of the [illegible] as large as [illegible]
[illegible] in [illegible] here! [illegible]

If it should be ascertained (in Cooke's Herbarium) that C.S. is the same as C. umbr.

[illegible] adopted [illegible]

[illegible] name [illegible] Ohio [illegible]

[illegible] garden [illegible] to [illegible] things for you [illegible] my correspondents [illegible] for Ohio [illegible]

Mr Little & Brown
Boston
Mass

Answ. 15th Nov.

St Louis Octob 8th 1842

My dear Doctor

yesterday I was gratified by the receipt of your letter of Sept. 26th. Your letters are such rare favors now, that even a short one like that is very acceptable. I have been working a little for you, in collecting roots and seeds; and the great difficulty I labour under is that I can hardly preserve the roots well till it is time to send them. I will do my best however. —

Now the Cuscuta paper! Having waited so long, I would have been much gratified, if Silliman had waited three months longer! For I have by close examination this fall, and by re-examining the dried specimens, found it necessary to make some alterations; and the most important one is the changing of all the names! I have become satisfied that their growing on certain plants is not constant enough to give a name to the parasite. I thought the printing had been deferred, as I never got proofsheets; and now it is too late to make the alterations. The editors will have to spare me a few pages of the next number. For your own information I will add that I would change the name of C. Cephalanthi to tenuiflora, Cryli to incurva, Sanguinalis to umbrosa Boigr.? (I now believe it to be Hookers umbrosa, but, it grows also in open sunny ponds! and his arvensis also in shady woods! — But both are distinct species distinct in flower and fruit; carinata to vulgivaga (Obeyrik's arvensis) and Polygonorum to arvensis. — Some other alterations are necessary umbrosa is neither always the largest nor the latest species — this season I found vulgivaga so it depends on locality etc. — But the most interesting thing is the addition of a new species of Lepidanche which if the other retain the name Compositarum might be called fuliginosa. But I should prefer to call the first L. squarrosa and the other L. adpressa. It is a true Lepidanche, but it makes it necessary to restrict most of what I have said of the genus to the first species; in its habit it approaches more to Cuscuta. I found it in thickets,

Lepidoptera impressa

on Lonicera, Rhododrin, Rhus, Vitis, Bignonia etc, the other grows in prairies or on the margin of woods. —

The Asters I have studied this fall. We have here so far as I know now: A. sericeus (one in my herbarium for Arkansas might be phyllolepis, but is probably a new species) A. patens (common) A. laevis A. turbinellus (common) squarrosus (very common), A. cordifolius (smooth, loose flowers, and pubescent and more densely flowered, thyrsoid). — A. sagittifolius (white & smooth or blue and pubescent, if this is not A. drummondi, which in fact perfectly agrees with our plant, but the achenia are always glabrous! I shall send roots). — A. ericoides (rare, only in low prairies) multiflorus — dumosus, tradescanti mixen & diffusus simplex tenuifolius (= many varieties, but always hirsut never smooth) carneus oblongifolius and novae Angliae. And one certainly undescribed species! It belongs to your grandiflori pag. 142 + scales of the involucre subulated etc. Now you ought to say *, leaves sessile No. 66 – 69. **, leaves petiolad, cordate 69. b. Aster — I will not name it, because I may be mistaken, but I send you roots and specimens as soon as possible. Stem and leaves appear to be those of A. undulatus, but the flower is that of oblongifolius! very squarrose involucre, about 25 ray flowers and 75 disc flowers, Achenia smooth. — grows in woods in several places 6 inches to 2 feet high, always with few sparse flowers. — Perhaps you may recognize it as a long described species, but I can find nothing like it neither in your flora nor in Nees. — I have also an Aster from Texas, which may be new, belonging to the Conyzoidi flowering in April, linear leaves etc. — we might call my new Aster heterogenus partly on account of the great difference of the lower cordate and upper linear squarrose leaves, but principally on account of the plant belonging in stem & leaves to the cordifolii and in flower to the grandiflori; I include a part in this letter, if I can. —

~~[illegible] the plants which I enclose [illegible] is a Lycopus (perhaps Buchanan [illegible]~~ Lycopus angustifolius. It is certainly a distinct species but appears to have been neglected by ~~[illegible]~~ botanists; it is not uncommon here — 2 stamens a long as corolla, rudiments of two others very short covered by the pubescence of the throat. — It throws out long stolones, like L. virginicus. — So we have here L. angustif. sinuatus, virginicus and one which I described in a letter of October last year — L. sessilifolius, — remarkable by its sessile leaves and sessile anthers*. L. angustifolius grows also on the Niagara L. exaltatus I have not seen here **, It appears that filaments elongate much after the flower opens fully — may that be how the one also?

What do you do with those Alisma marcus that have more stamens than Alisma and are not monoicous like Sagittaria? A new Genus would not do — you will have to alter the generic character of Alisma I think; it will include then two plants, which are common here; one with 12 and the other with 18–24 stamens.

I owe Mr Carey some more plants. If the Gentlemen will continue the exchanges, I am very willing to send more of our or Texan plants; I have collected a large supply this season.

Have you seen Mr Buckley is he returned from the South? — He requested me to send him plants and letters of introduction in this month. The letters I will send to Dresden, where he wants them, but a large parcel of plants is lying here ready for him; but I have no opportunity to forward them. You got a small parcel for him — that box; please let him have it. I have asked a great many things in former letters or made remarks, which I should like to see noticed in your answers if your time and convenience should permit it.

The question was: have you any thing like the true European Polygonum hydropiper growing in your neighborhood? We have a plant here, which I dont see noticed in any flora very distinct from P. punctatum (which Torrey = the flora of New York calls P. hydropiper) It agrees in habit, inflorescence, number of stamens with the European P. hydropiper, but has rugulose not shining fruit, and I believe the europen plant to have further lower bracteles though my specimen is not complete enough to ascertain it fully. — I believe I have send you a specimen of our plant — If there is no other difference I should call it a geographical variety — but singular that it should only grow on the Mississippi and not east

You, very truly

George Engelmann

Dr Asa Gray

Cambridge, Mass.

Arbor Vitae, Juniperus
2 forms, radial leaf, small
middle cones leaf, large)

St Louis Nov. 13th 1842

My dear Doctor

I have received your last letter and answered it about four or five weeks ago. Since then I have been busy in collecting seeds and roots for you and have gathered all those you wished, and a number of others, but whether I have treated them properly and whether a single one will safely arrive, I question very much. I have put them in good order when occasionally did I fear much, that they are dried up. I never have sent them before, but I always expected, and still expect important additions from my friends Geyer & Lindheimer, from the latter I received a small parcel with plants and a few seeds, but expect him soon self with more, if the new mexican war does not keep him there of course!

But now let me express my ~~thanks~~ regrets to you for the great trouble I have occasioned you with the Cercostac! It is only a week or so that I obtained a number of Silliman's last journal, and for our new paper there, you have done a great deal to improve it, much more than I would have dared to ask from you. But I can not now let ask more. What is your advice about coloring the names; is it not ridiculous to make them to day and alter them tomorrow? Is it not better to leave them as they are, instead of altering them, however appropriate such an alteration may be? If you agree to the alteration I would substitute tenuiflora for Cephalanthi, incanum for compli, umbrosa Beyr? for Saunii and chlorocarpa for Oliganum. It might then also be proper to substitute L. Drache squamata for Compositum, and adpressa for pulicum, though so far the names L. Comp. & pul. appear to be entirely appropriate. Whether you would be in favour of

such an alteration or not, I must send a small article for the next number of the Journal, correcting some errors in the present one, and adding the new Lepidanche. Under the C. verrucosa also I believe I have two species; the 2 or 3 flowers from Mr Cary on Petalostemon were insufficient to fully characterize the species, and I thought the specimens from Kirkbonner the same; but now I have received more Curcutae from him, and enough there on on Petalostemon very different from his. April specimens are certainly the same as Drummonds! This must remain the verrucosa I believe; but the petite part of the description relates to Kirkbonner plant, which may be a distinct species or perhaps a style, the only one which I have with purple stigmas; so we have two more, 10 in the whole! Have you got the extra numbers — see those inclosed, for me to Miss Poppe if you please and let me know, to whom you have given copies.

Beside the already indicated errors; allow

pag 335 l. 1. f. filiform for capitate

7 l. Capitate th: bilong; l: flowers: stramineous

10 C Sumnii smooth dele the comma

336 l. 6 read less for more

2 f. below 4 parts?

337 21 and 22 read mostly 4 parted or even 3 parted

339 11 f. below dele cleft (the tube is deeper, more cylindrical)

Much obliged to you for the manner in which you have added the notices of Hooker, and put in my mouth or my pen things which I did not know! The impression that Hooker had of Lepidanche was for some years my own, before I examined it — Perhaps Hooker had immature specimens, and if you see one, you can not conceive how flowers can have place in that crowded mouth of sides!

I intend to make up a complete set of my Curcutae and forward them to you for Hooker with the request to send you for me a small branch if possible on a few flowers of his specimens of his with amount Curcutae. The specimen from the N.W. Coast might be different from ours; and what is C coronata? perhaps our Lepidanche? Judging from the name, not from the locality.

But enough of this theme. Answer me soon! But the more to induce you to answer soon, I will wait for this answer before I send any thing to you; you must give me more distinctly Moss in general and sphagnum especially is hard to be got here; our climate is not favorable for mosses, and peat or sphagnum is never seen in Missouri or Illinois to my knowledge — though I was astonished to find a very small spot near Little Rock. How far does it go south on the Alleghany Mts? — Still as soon as the weather gets fairer, for we have winter now, try to collect all the roots for you again in hopes to get them in better condition for you; and the seed all together. — I have seed of Amb. bident. & coronopif., which are both annual or Ambrosia annual. — I find Isoetes for the first time, as high as this sheet, apparently different from the europe plant leaves not stiff, fragile and genuine only of half the diameter than those of the europ plant which is so much smaller; but of the same construction & shape. Send me some good eastern specimens, which are said to be so very small. — I forgot to send a head or leaf of my new Aster, but will do it now. How does A. undulatus look? you say it is common, but I have never seen nor received it. — Amongst Lindheimers last are some new Asters! Which I could send then to you soon. A. Drummond is of the Novae, just as you describe it — but I doubt whether it grows here, we have a plant very much like it but larger, less branched, and always with

smooth obtusa — probably only a very pubescent form of A. sagittifolia, of which we have, if I am right another form perfectly smooth, with white rays; which is the more common one; the pubescent form is blue! Some have only a few broad leaves, and others have the all so! — I shall see if you speak out of specimen.

Write soon! I hope the next arrival from Boppe will bring me the desired books and plants.

Did not Dr Le send an extra copy? Dr Gray not credited me in article

Give me a set for Stokes & it will bring you those you want.

and I shall soon send, if I find no better opportunity, a package for you — and for Mr Carey & N. York by New Orleans

Yours Entirely

George Engelmann

Prof Asa Gray
Cambridge

Tell me something about my Polygonum hydropiper

My Dear Doctor

[illegible]

(the same navigation is common to the pipelines)

distributed you some plants in your journal, and among others a few more branches of this Aster. I doubt whether I can get a root, if I can you shall have one. To you as a natural gardener or gardening botanist it will be interesting to learn that amongst the Linnaeus plants was a bulbous plant, where, though the bulbs were cut in half, a few little young bulbs living, planted it, and it grows! Seeds I have not yet got from him. This bulb is perhaps a new genus, like amaryllis but with a very long tube of corolla. Like Crinum but scarlet and one-flowered, however we shall see when it grows. As I have the room there I send you drawings of three species Asters; one is a Tripolium perhaps T. linifolium but larger, larger leaves, grows in British swamps — I have only one flowering head, as you see in the drawing — The other is an Aster belonging to conyzoides, near virgatus, which I have called vernalis, collected in March on moist prairies near Houston; of this I include a head and shall send you a specimen. — I am afraid to trust to the Mississippi any valuable plants; a few weeks ago I lost 2 parcels for Mssrs Carpenter and Riddell. — May not Hooker's Cuscuta coronata from New Orleans be our C. americana also on a Lacinus!

Aster heterogenus, or the name of A. anomalus would be preferable? I leave you the choice; petioles not margined only on the large specimens on the upper leaves somewhat, but dilated at base.

Aster ramosissimus — scoparius would be a better name or is it already preoccupied? a singular plant of saline prairies near the Galveston Bay. I send you a drawing and a few branches. I have only a single flowering head; ovaries glabrous! —

The Carpenter which you send me a year ago belong all to only 2 species except the one or Saururus and the pelagonic, those from Mr Clary also; only one is vernonia.

I shall look through my compositae and take notes for you; that I may trouble you with another long letter soon.

I include my additions to Cusonte, and wish you may have it published. I think it better to wait not longer; many observations and remarks which have nothing to do with the identification of the species I have left out; the drawings at the bottom are for you; please cut them off and put them away in your copy of the Paper.

I think Aster is an easier genus than vernonia. I am nearly satisfied that all our Vernonias: novebracensis, praealta, baldwini, arkansana, fasciculata, altissima are one and the same! — I shall send you forms between arkansana and praealta, collected with the first one, from fertile to praealta we see all the transitions as we advance from wet prairie, or with swampy plants to dry sand; altissima is the form in shady woods, arkansana on sandy riverbanks, — Baldwini dry barren hilly country, and praealta everywhere.

I see nothing to add at present, and close

truly yours

J Engelmann

Would you advise to change Lepidanche, seems to Chrysopsis name; Lepidanche compacta? perhaps it would be better but the same would be much more appropriate for the other species. However if you say so, please to alter it — the paper!

Among Northern Asters I should like to get those which I have not: Novae angliae, spectabilis, gracilis undulatus, grandis, laevis, praealtus, elodes, ptarmicoides, adscendens, nemoralis, linifolius, perhaps Mr Clary would furnish them.

Notes on Aster.

Aster macrophyllus collected by me on Manitou Island and in Michigan. My specimens of A. corymbosus from Mr Lapham are nothing but this plant, grown in shade, with thinner leaves.

A. paludosus Texas galveston, Lindheimer, a very rigid plant, grown in shade, with thinner leaves; sent me labelled A. paludosus?, which is perhaps A. novae angliae.

A. phyllolepis Texas Lindheimer

A. phyllolepis β. argyrolepis collected by me on the prairies of both sides Arkansas, a shorter plant, with considerably larger heads, old leaves not smooth but scabrous above, canescent and scales canescently pubescent, scabrous, where old.

A. ramosissimus might be called an Aster collected near the coast by the Lindheimer, apparently similar to A. scoparius Dcn, which name would be very appropriate to the lowest, cauline leaves linear-lanceolate form, very scabrous, leaves of the numerous virgate branches small, linear lanceolate, adpressed, involucre acute, lanceolate adpressed. Athenaeum glabr. belongs to conyzoides? very near agrestis! perhaps near brachyphyllus also!

A. geyeri Texas — I have never seen the form filifolius

A. laevis common here — all forms

A. virgatus Ell? from Texas, Lindheimer, but achenia pubescent, involucre [illegible]

A. vernalis n. sp. Texas, Lindheimer, near virgatus & gymnocephalus, apparently, every slightly pubescent

A. turbinellus common here in open grassy woods, dry hilly soil.

A. agrestis common — all sizes and shapes, our most common species in prairies, edge woods, and everywhere on roadsides etc. Small and large 6 inches to 3 feet, nearly smooth (except the scabrous leaves) to roughhairy; flowers larger & smaller; our earliest Aster, end of July to October.

A. gracilis β. vernus, Texas Lindheimer March and April together with A. vernalis; lower leaves entire, truncate or subcordate at base, lanceolate elongate; scales of involucre narrower, linear lanceolate acute or acuminate.

A. undulatus never seen! is yours: throughout the United States correct?

A. cordifolius glabrous, stem weak, leaves membranaceous, heads very small, flowers pale blue or white — together with another form, with stouter stem, pubescent, former leaves less largely toothed, inflorescence more compact, heads a little larger, flowers blue; I can find no other difference.

A. sagittifolius — what I take to be the true sagittifolius is a plant 2–4 feet, strict, few branches if any, smooth, lowest leaves only cordate, most cauline ones of this shape, panicle contracted, thyrsoid, flowers white, growing in dry open woods, margin of thickets, involucre scales loose. — But there is another plant apparently quite different, and if I am not much mistaken the Drummond's of Texas which can hardly be any thing but a variety of sagittifolius or a species between sagitt & drummondii: — involucre the same, loose etc., flowers blue — whole stem & leaves pubescent, lower surface sometimes canescently tomentose, always soft, leaves larger, wider and cauline ones more cordate, but achenia perfectly smooth; grows in moist shady places.

A. drummondii! Texas not yet seen here. Involucre not as loose as the last, smaller heads, shot pedicelled, nemoralis, but not so crowded, leaves still more cordate, smaller.

A. oviformis rare here, common on the richest black soil of a low Prairie with Helianthus rigidus.

A. multiflorus common here

A. novae angliae = A. pedicularis here

A. laevis = all varieties which entirely are only varieties!

A. simplex well defined, rather common, nearly always perfectly smooth or with [illegible] lines. 2 remarkable varieties, 1, very near A. carneus, only by the shorter pappus and pubescent achenia distinguished, same habitat etc., with sharp banks of a slow stream, 2, muddy banks of the same [illegible] with flowerheads larger, long pedunculate, few, scales large, foliar

Two new genera of Texan plants discovered by F. Lindheimer and described by G. Engelmann, M.D.

Lindheimeria calyx infernus urceolatus, 5 dentatus, lana densa vestitus, persistens; corolla infera, tubulosa, 5 dentata, caduca, persistens; anthere unilocellares sessiles in fauce corollæ et alternantes cum lobis; ovarium superum 1 loculare regulariter 2 ovulatum; lana capitulum; calyx hirsutissimus involucrum compressum, marginibus spinoso-crispatis, latere altero basi 1 spinosus, altero 2 spinosus, totus lana densa vestitus. Utriculus monospermus, indehiscens, semen pendulum longe spiralis, funiculo expansum ita instructum et ex apici apice recurvo pendulum. Embryo cylindricus semini similis, axin semen incumbens, peripherium radicula ad hilum versa.

Genus Acleranthus maxime affine est Gaillardiniæ solummodo corollæ irregulari distinctum.

Herba Texana annua, erecta, lanuginosa, foliis oppositis exstipulatis, floribus spicatis, spicis interruptis, ramosis integris. Genus amicissimo F. Lindheimer perscrutatori floræ Texanæ diligentissimo dicatum.

L. Texana folia lanceolata, inferioribus in petiolum attenuatis, superioribus sessilibus, omnibus viridibus scabridis, nitidis, albo-lanuginosis.

Habitat in Texas et Louisiana, mense Junio 15 cm. 10 mense Julio. Flores small ~~[illegible]~~ in extremis ramis in ceno clusters, forming an interrupted spike; corolla yellowish, anthers bright red; ovaries in one group in inner sides near base. Flowers in September & October.

Sisyrinchium spatha bifida unigloba; perianthium superum longe tubulosum limbo sexpartito regulari; antheræ 6 lineares filiformes ad vesicam limbi subsessiles; stigma ex vertice globum, capsula infera 3 valvis 3 locularis, seminibus distichis subsitis (4-8 in loculis singulis).

Species unica affinis spatha unisiora tubo elongato et antheris sessilibus diversum. Nomen ex affinitate trivialis.

Herba bulbosa Texana.

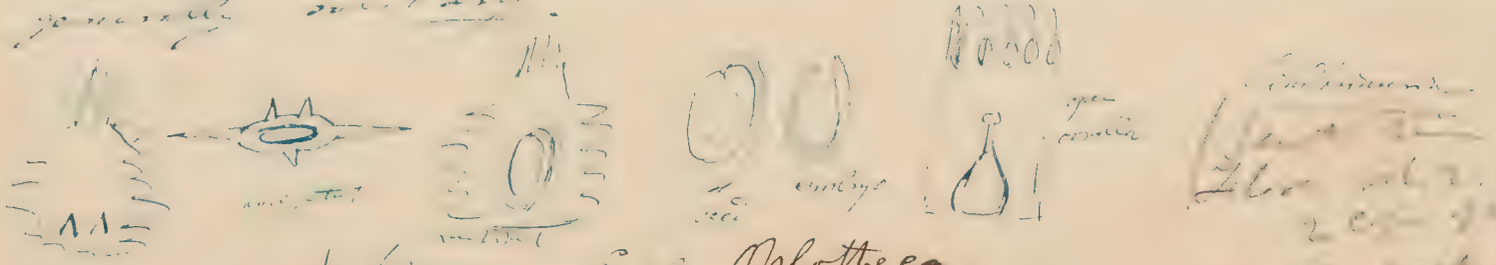
~~Sisyrinchium~~ Sisyrinchium anceps (folia linearia, scapo brevioribus, tubo floris elongato (4-6 pollicari), laciniis limbi ovato-lanceolatis, extrorsum curvatis; antheris sessilibus; capsula depressa).

Grows in dry prairies near Austin Texas (F. Lindheimer).

Flowers from August to October.

Leaves 3 to 4 inches long, occasionally reaching without and the time of flowering; scape 4 to 8 inches high; tube of the white flowers nearly the same length.

Hybrids seem to exist between Austin and Galveston but generally sterile.



Mr. Dr. Gray

My Dear Doctor

Mobile Jan 18th 1873

Mr. Texas will leave here tomorrow and take with him a package of more than 70 seeds, some of them of our rarer plants and the greater part of them from me. I send a Cindarinus from Texas, found in the mouth of the bulb of an Amaryllis like plant and of a species that I last year in Connecticut or possibly some other species, with pom Exp. the bulb is covering a nest of Bulbs, Bulbilum, of which below. Besides this parcel of seeds there is a considerable package of plants with a few exceptions Cryptogams, some of which I do not know, may be useful to you. In spite of I have made the point to have strictly thought I have confined myself to this parcel alone but before leaving I shall be obliged to add to it by another parcel with more plants. Together with the Cryptogams is a small parcel containing all my duplicates of phanerogams, for Hooker; you will oblige me if forwarding them together with the request to send me if possible a specimen or at least a small piece of the American Cryptogam Dermatocarpon Cinerea, growing on Cymosus Cornus, and if it be the time, a flower or two of the Gymnocarpon, Dryopteris and other specimens of the old Herbaria.

Cindarinus is with me at present, and we study the most my specimens so that it will be unnecessary to make more valuable selections next season than we did before. You have seen some of his specimens and will see them, and can judge from them that they are better selected, more and better prepared specimens than most of those you have seen before. If I except the figures — the use of pressed or light — pinned to paper, like the specimens now you see like the Dr. Durand's, or on only the top of the paper like the Drummond's. Now as mentioned is to remain a new years calendar, is the exploration of Texas and the collection of plants there, and indeed to make at least his living by it; he is eager to do the same thing in our western & northern country. I have promised to offer their collections for sale, or otherwise I would guarantee the genuineness, the proper selection of the specimens, and that they shall be rarest plants of the western and southwestern country we can find in their collection. That therefore only two to four Centuries in one year could be furnished at that price could not be under 8 or 10 Dollars, payable in Mobile, or New York; and I confident to be delivered next

Summer or fall, an agreement to be made on delivery of the plants.
Do you say to that plan? If you approve of it, we think it
possible you will do me a favor to publish an advertisement
in Prairie Farmer to that effect, and Botanists who
wish to get a collection may apply to you or to me.
It would be well to use the Farmer also a few words referring
to the advertisement just to call it to the same also in Illinois
Farmer. It is much to find it in such a German journal.
In that way we could encourage adventurous and ardent
botanists, could get a little knowledge of distant and
little known country, and obtain still more of good
specimens. Thousands. If such understanding first favorable
they might be extended to other countries, and Oregon
where Nuttall & Douglas have done much but only
not all. Tell me your opinion about it. We price
might be put at two dollars. Or than dozen if not
not one or two from 100 plants.

I was determined to have called a new original or interesting species
in my friend Lindheimer's name, and I believe there are
1000 amongst those collected by him to take. It is rather an
unusual thing, but which is monopetalous. I can not
tell most class it near Oleaceae. It is hardly in any one
important point — the South American genus Chionanthus excepted, the
monopetalous corolla is an impossible. I think to divide it from it
and take it for this genus Chionanthus; if you find a second — and
divide in the parcels. Let more in me. The latter description of the
East Texas new genus you find on another page and if it meets with
your approval I beg you to send it to Dr Gillman — to insert it
if I am not too late already. I should not like to leave
the right to name that plant after my friend.

Besides these the parcel contains a pretty full suit of herbarium
Texas Vernonias and the transition of the U. perennis to
U. praealta is not there. Just full suits may be collected
seen more easily than between the other. Some of the
plants are rarest; Verbena, Chiococca, I wish you to
return when you have examined them, as they are small
specimens, the others you will please to keep if you like.
Dr Gray expects me to write to him about the
transition of this herbarium. I shall do so and send him
also a little suit of my specimens together with some other
rare plants. Our Aster sagittifolius near Drummond's
has probably been mistaken for this Texan plant. Now
if I am able to examine specimens, which I seen you,

[illegible] rather somewhat flattened. fl. in Texas in April & May. Pods 1¼ – 1¾ inches long. — R. sanguinea is another, indeed a long, monostate for some distance below the head and considerably so immediately below it; but the calyx again hemispherical or somewhat conical; fl. near Houston in May & June. Pods 1 – 1½ inches long.

Rhynchosia reticulata n. sp. [illegible] R. erythrina, from which it differs in nearly or quite glabrous, narrower, more coarsely reticulate leaflets above, in pale green beneath, but not purple, in flowers with long exserted keel teeth (= ft. a, [illegible] to calyx) [illegible] of calyx smooth (not [illegible]) the fourth as long as the rest, not one half as long. Wings and lips of segments of corolla purplish — Athens, Pappher, [illegible] the same in both.

Desmodium microphyllum n. sp. caule gracile sericeo (plerumque villosulo) supra virgatim ramoso, foliis glabris adpresse serratis, margine et subtus ad nervos ciliato-scabris, reticulatis, caulinis inferioribus ternatis, mediis et superioribus trifoliolatis, foliolis acutis, lateralibus obliquis, stipulis [illegible] ramis recurvis elongatis virgatim ramulosis, gemmis inclusis, bracteis caducis, inferioribus, ovariis pubescentibus, fl. dicti 4 – 6, fl. radii 2 – 4. — Margin of woods with Hexalysia, prairies from Texas, Sept. Nitot. Near D. rhynchophyllum.

Desmodium Ludwigii caule basi adscendente foliosa, foliis simplicibus, ovatis, cuneatis, mucronatis, apiculatis, supernis, elongatis, inferioribus superioribus longius brevioribus, uninervis, sparsim venosis, pilosiuscule reticulatis (subtus carnosis) integris, margine scabris; pannulis glabris; pedicellis longis bractearis subsecundis, angustis, [illegible] capitulis majusculis, squamis linearibus glabris, extremis brevibus laxis; fl. radialibus 6 – 10, fl. dicti 11 – 13, ovariis minutim pubentibus. Dry open places & rocky prairie west of Houston, fl. June & July.

Similar to D. sanguinalis Ell. but distinguished by the ascending stem, folia integra, pedicelli elongati, ovaria puberula.

I shall trouble you at present with my notes on other plants. — If you send the short article on the two new genera to Silliman please to cut off the rough figures which I have appended. — The parcel for you sent last fall is not yet here but probably on a boat on the Mississippi — the Ice on a Sunday. Mr Poppe will soon send a large quantity of goods here

Dr Asa Gray
Cambridge Mass.

that will be a good opportunity to send me something. also a copy of 2d ms of 2d volume of Flora for Sandwich-Isl which I spoke through Dr Brown — if you have not yet sent it, please let me have it and charge me with it.

Write soon —

Yours entirely
J Engelmann

Dr A Gray
Cambridge

Recd March 29

St Louis March 9th 1843

My dear Doctor

Yours of 13th of February reached here at the end of last month, late and partly nearly illegible, on account of its' having laid with the mail in some stream! — I am very glad to see the end of Compositae, but I have been the same misfortune which I had with my corvitae I am just too late with my annotations!

Nevertheless I have send the parcel a few days ago to New York; it had been laying here since 6 or 8 weeks and nobody would trouble himself with it. You receive about Compositae for your own Herbarium and about which I wish you to return. Lindheimera and Crinidium is amongst the numbers; You will find some remarks on the ~~latter~~ first on the next page; the latter may not be new as it appears not to be a rare plant in that part of Texas, and a very showy one in August & September. You have now undoubtedly got the seeds, and the two bulbs, which I hope are sound.

Have you looked through my additions? do you find any thing new in them? — The Compositae must be still so fresh in your memory that it will be easy for you to examine my specimens and give your opinion about them and return those which I wish to get back.

Now Lindheimer! His predilections, his health and the very proper wish to come to a certain conclusion with his botanical labours in one part of the country before he moves to another will raise him to prefer Texas to any other field of operations. Besides that his money means are so contracted, that at present he could not do more if he would! — He is amply prepared to go to Texas, is aquainted ~~with~~ our plants here, and with

a part of the flora of Texas, and will make his collections in future to great advantage. — Do you know any thing about Drummonds movements in Texas, when, at what seasons and where he was there? It would be important for ~~us~~ us to know that. — By the by, Drummonds name recurs a little too often in the botany of Texas, Aster Dr. Solidago D. Helianthus Dr. and hundred others, don't you think so — when should we come to, if the names of Collectors are to exclude most other trivial names?

Geyer does not expect to go with Fremont or any expedition but will go any how, and I encourage him and intend to assist him; for I know his zeal and his indefatigability and you know also the beauty of his specimens. He will do a great deal for the promotion of our knowledge of western botany. But before 4 or 6 weeks ~~at~~ can not be known how he will get off and whereto.

Lüders who brought a letter from you and was recommended to you by Prof Lehmann, has collected last summer in the interior of this state but was sick several months, so that he could not do a great deal; by the way, he has also found the Aster anomalus. — His warmest wish now is to get to the mountains; how would it do to recommend him to Mr Fremont or the head of the Oregon expedition? I believe F. would like him much better than Geyer, and Lüders was much delighted with my proposition. — I am going to write to Lieutenant Fremont myself today though. I doubt, whether he goes, as the Oregon bill does not appear to pass. — Lüders will go either in the employment of the government expedition or under its protection only. — In the first case his collections will belong to the government in the latter he is willing to have them distributed in the same way as Lindheimers and Geyers. We can not have labourers enough in the field!

Lindheimeria belongs to the Coleanthaceae:

Link: calyx persistens, fructiger cum involucro periraphis deciduus, tubus campanulatus (annulo glanduloso?) coarctatus; limbus (4–)5 partitus, aestivatione imbricatus. (Petala nulla) Stamina (ante annulum faucis inserta) 5, calycis laciniis opposita. Ovarium liberum uniloculare etc; Stylus 1, capitatus s. emarginatus. Utriculus membranaceus calycis tubo indurato involutus, Embryo peripheericus, albumen farinaceum. — Folia oppositi exstipulata.

Decandolle III, 377 has the same only shorter.
Lindley (Torry's edit): (Apetalous) dicotyledons — inferior tubular indurated calyx, perigynous stamens — — etc.

All the underlined words are especially characteristic; the inclosed ones are exceptions in our plant from the common type.

Amaranthaceae have "Perigonium 3–5 partitum persistens", or "calyx 3–5 leaved, hypogynous, stamens, persistent" — stamina hypogyna.

So both families are described as apetalous and if that should prevent the attaching the Lindheimer to Coleanthaceae it will do the same in regard to Amaranthaceae, but as Coleanthaceae are considered to be near Illecebraceae (which have petals) Lindh. with its gamopetalous corolla may rather be referred here than to the always apetalous Amaranthaceae. — Then the indurated calyx, which forms the outer integument and part of the fruit, and comes off with it, also the ~~tage~~ as also the perigynous stamens should decide; in Amaranthaceae the stamens are hypogynous, and the calyx is simply persistent. — As I have said before, the Chilian Guillelminea of Humbert must bear a very close resemblance to the Lindheimeria. —

Would you assist Lüders application by your recommendation to Lieut Fremont? — It would have a good influence I expect. Do so! — Do you know any thing of Nuttalls Friend, Mr Gambel who went to Santa Fe and California 2 years ago? —

I expect your answer soon, and in my next I can tell you more about our arrangements, so as to be able to publish them in scientific journals.

Now another interesting thing. Since I wrote you last

I have received a letter from Hooker, written after he had seen my Cuscuta paper. He requested me to send him specimens of Cuscuta, encouraged me to go on in that way and asked wether I would not undertake a monography of the family, and offered the loan of his Herbarium! — He appears to have not known anything of Choisy's monography. I answered him after that it would probably be a superfluous undertaking now but if he wished it I thought it still useful. I was very willing to do it, — as I feel a great interest in that genus now. — He asked whether I myself or any body else would go up the Missouri and collect — and in that way he prepared the way for my propositions of Lindheimer and Geyers (and Leiders perhaps) Collections. I wrote him of their plans. I sent him also a description of my Lindheimeria as I wanted to have an interesting remarkable genus dedicated to my friend. — In the parcel is a small package of Cuscutae which I request you to forward to Hooker.

Prof Asa Gray
Cambridge
Mass

MO

I hope to get an early answer from you; and learn from you that you got the seeds safe — that they begin to germinate. The roots collected for you appear to be all killed by our extraordinary long and hard winter. Snow is still snow in the streets to day & when the Erigenia ought to be in bloom!

Yours entirely
G. Engelmann

I will try to get roots again when the ground opens.

Recd. June 22

St Louis June 4th 1843.

My dear Doctor,

Your letters of 25 & 28 March have reached me, as also all the parcels entrusted to the care of Messrs Pope. — I am sorry to be foiled again in my endeavour to name a new genus after Lindheimer, but will try again as you say. He is now busy in Texas; in New Orleans, he has been for some days with Prof Riddell and got good hints from him. — He has sent me about thirty specimen from Galveston in a very small parcel, of which I have sent you some a few days ago to the care of Mr Carey. You will find the Linum Berendieri, certainly distinct; you will oblige me by dissecting them, especially the Primulacea, for me certainly a new genus but probably not new to others as it is common on Galveston. — Also the Ulvinlacia for wet meadows. — The Atheropogon for Beardstown appears to me new and I have ventured to name and describe it. Among his plants is yet Bonplea thombifolia with fine fruit. — So Lindheimer is at work and will send me a collection perhaps by the end of this month, for distribution.

Geyer left here under the protection of Sir Wm Stewart; — he had to equip himself and arm himself; food and especially for transportation of baggage and collections is furnished by Stewart who has left here beginning of this month with a party of about 60.

Lieders is also gone with him, but more especially with a party of catholic missionaries who have a settlement on the upper waters of Clark river, I believe. He expects to stay there next winter and perhaps next summer too. Geyer will perhaps return to the foot of the mountains and the Black Hills and make his collections there; but he is yet undecided.

These three offer their collections for sale; I will here take care of them, number, etc the different collections specimens and they may be had either here from me or from you or some body else east, New York for example, who would trouble himself with this business. Perhaps Mr Carey would take care of it and take one set for his trouble. I wish you would arrange all that, if you can do it without much trouble. Your offer to assist me in naming the plants will be very acceptable, as I am from want of the new works and other reasons unable to do much in that way. I will therefore always send you a full set of the plants as soon as I can after their arrival for that purpose, which you will please keep for your own herbarium. —

Now the price: You think $10 the Rocky Mts plants and $8. the Texan plants are proper prices — Hooker writes me £2. is the usual price in England, $10. or 2 guineas would be too much for many to pay in New York as they have to bear freight and entrance duties (!!) besides; still he sends the names of 4 subscribers. Prof Brown my correspondent in Germany writes me that about $8.00 is the highest price paid.

Germany for the rarest plants; and 40 francs in Paris the usual price. Braun suggests to sell the largest and most splendid specimens in America and England, and send the smaller ones for a lower price to Germany which might be a good plan. — I am somewhat limited in the prices by the Collectors; but I think we might put the price as agreed at 8 and 10 Dollars in Stlouis or New York. Do you think it would be proper to send a number of collections to Europe? I think not at first — let us try — so! — If the collections want sell, why we have to go down, or give the trial up, as Geyer and Lindh has instructed me to do. — We can promise those that take 10 collections I would the money for them the eleventh gratis, if you think that a good move. — It might be proper always to publish a list and descriptive Catalogue of each Centurie before they are given out, as I have tried to do with the 150 plants collected by Geyer last year. I want to hear your opinions about all that, and if they do not materially differ from mine I wish you would publish them without delay in all the proper journals here and in Europe: — For the present we will say nothing of smaller specimens for lower prices, but wait first. —

You find a sheet enclosed, which contains a description and catalogue of 150 plants collected by Geyer etc — you find all in the paper itself. — I wish you would look through it and have it published in Silliman's or some other journal very soon, if possible. But you will have to add, what I have left out entirely, the price, and the person to whom to apply — you or Mr Carey. I dont know Mr C. at all but as he is an academy devoted to Botany and a resident in the principal commercial place in the Union he would be both a proper and as I hope also a willing person to undertake these things. The price might be put at $5 or 6 for the whole 150 or rather 152; as there are a number of common plants amongst them. You will do me a favour by adding these Items. As soon as I get an answer from you I shall forward the 20 collections (that is all) to Mr Carey either directly to Mr Carey (what is his direction) or to Messrs Oppe. — There are 30 more collections of 100 plants only which I will send to Europe. — I hope the 20 common collections could be sold soon. — I should like to get some 70 extra copies of the descriptive Catalogue, 50 of which will go with the 20 and 30 collections, and 20 be for me.

This Catalogue and the arrangement of the plants has caused me to delay writing to you so long; as it has also interrupted my other correspondence. This and the arrangement of Lindheimers plants, of which I have now about 4 or 5000 on hand. Then will come Lindheimers new plants and so I shall be kept in my study all summer and be prevented from exploring our neighborhood. But some general I will pay particular attention to, and prepare by and by the materials for a Monography. The genera I have at present in view are Potamogeton and especially the American Euphorbia — which last one, though offering the most excellent characteristics appears to be in bad disorder, at least in our western and southwestern species. I believe I have two new ones near E. polygonifolia (which is not here, b.) I have specimens from Mr Carey. — If you approve of the plan I will try to get materials together so that I can begin next fall or winter in good earnest. — What do you say. About Potamogeton you will find some remarks in Geyers Catalogue.

Now to your letters. I am sorry that you lost the two bulbs for Texas; but here they grow both well and I can in time supply you with the Cooperia & Crinum! also most other seeds are doing well. — It is remarkable that all the living plants & roots collected for you last fall, have been destroyed by the long & cold winter, badly sheltered as they were. But I shall collect new ones and have begun. Astragalus trichocalyx? (You have specimens from me long since and never told me what you think of it, whether it is a new species or not. In a former letter I have spoke about it. — I can not think it but a new species, for which the name edulis would be a very proper one) — Batschia longifolia, Viola delphinifolia and others are growing now in flower pots before me for you.

I hope you have printed in Silliman my additions to Cusseria. I have not to make any addition except that I found Lepidanche adpressa in several places here, also in the dump shady woods of the Illinois river, and the specimen you sent me for Alabama or Prairies glades, I believe, is the same also — Begnias 'Coccinea' is most probably this — Buckley's Cusseria from the Mountains are remarkable forms of the common

species. — When I get fresh materials for Hooker and perhaps for Washington & Philadelphia, and from Texas & the Mountains I may give another addition! — I do not think that I may have any thing to alter so far, though you are inclined to make my Lepidanche, Cassinia again? — I think we have less remarkable differences constitute genera in other families.

You would do me a favour by returning my specimen of Artemisia canadensis for Manitoo, as I have no other one.

Have you examined my texan composite with my additions or remarks? I have examined Sylotes or Leucopsidia again and if this fall specimen is not different from the spring form the central florets are sterile, as I have said before. Do you find any difference between this Arkansas & Texas specimen?

Is not the Gnaphalium which I send you now a distinct species? It is very different in growth and in fruit from my Arkansas species of pinnatum.

You would do me a great favour if you would name not only the specimens which you return to me but also the others, which you keep — (I send them partly for that purpose) and send me the names.

Dont forget to send the advertisement (the writing of which together with some accompanying recommendation I must leave to you) of the Darby Mr & Lindheimer Collection to the different Journals, also to French journals — Any one may subscribe to all collections or to Geyers or Lindheimers separately. — payable at delivery here or in New York. —

Pray dont call too many species from their collector; the name should rather be taken from some distinctive mark if possible. If the older botanists had done so we would have to wade through thousands and tens of thousands of such names — it appears to be rather a new plan. I think it might do well enough in a large genus where truly distinctive names are difficult to find, — but the name of Drummond for example I hear or see so often now, that it begins to grate on my ears!

Fremont was here beginning of May for nearly 2 weeks and I assisted him in his preparations and gave him

instructions for geological & botanical researches on Collection, he will if possible ascend the Arkansas to its sources, crossover to Lake Bonneville and then to the Columbia. He said he was not authorized to take any botanist with him; but Stewart has taken besides Geyer a gardner and a german scientific gentleman" with him, who says he is also botanist & geologist — we will see what they do. I have no doubt Geyer will do more than all the others together. —

With a genius for Geyer & Lindheimer we ought to wait I think till they send one themselves, it will be more gratifying then. —

I am now translating and working out a manuscript Monography of American Equisetum by my friend Prof Braun in Carlsruhe, which I will send you in a few weeks, as soon as I have again be able to compare living specimens of our two new Equisseta, you will be much pleased with it. — Marsilea and others will follow, also Chara afterwards; I only wish I could ~~find~~ get together more american chara for him. —

Lessingia Germanorum you dont like the name, but it does not mean germans but brothers, called so by Chamisso in honour of his friends the brothers Lessing, one the botanist the other is one of the most talented painters in Germany, a man of powerful and original genius. I dont know therefore with the name ought to be written with a large capital.

Nuttrian Disorder appears to be native here, in grown on roadsides but also far from town in grassy places in the woods.

Write me soon if you can find time and dont forgot to make the necessary additions (price etc) to Geyers Catalogue; and the advertisement of the Rocky Mts & Texas Collection

Yours entirely

George Engelmann

Forbes
Sent Asa Gray
Cambridge
Mass.

St Louis July 27th 1843

My dear Doctor,

Yours of June 22d was received on July 3rd increased practice, and sickness and death in my family prevented me from answering your letter sooner. First I must mention that about 6 or 8 weeks ago I sent you a small parcel of plants from Texas, received this Spring from Lindheimer; about four weeks ago I sent another parcel with some others which I had received since, and a few days ago I sent the 3d parcel, with a few Cacti for Mr Bentham which I considered very interesting. They were all directed to the care of Mr John Carey 333 Greenwich St except the last which was directed to Wiley & Putnam — Will you get the letters? — and how will you obtain the first if Mr Carey has left New York — will they not be lost? I wish you would make some researches after them. — I am done packing and labeling Gayen's Illinois plants, — more trouble than I expected; Shall I send all 20 American collections of 150 species to Wiley & Putnam New York? Or do you advise me to keep a few here? — Thirty more containing only 100 species I will send to Germany. — Please send me the copies of my descriptive Catalogue, except about 30, of which you add one to each bundle of plants and send the others to my friends and correspondents — Curtis — Buckley — Oakes — Carey and the others, also to the Academy in Philadelphia and the National Institute in Washington — You forgot to tell me how high you fixed the price; —

I see that my friend A. Braun in Carlsruhe has a little prematurely announced the Texas etc collections in Germany for 12 to 15 florins — but before we can offer them at that price, we must see how many may be taken at 8 or 10 dollars. —

Your offer and conditions I gladly accept — I have neither leisure, nor books, collections etc sufficiently to do the work alone, and do it so well as to be creditable. — I send you some remarks so far as I have made them.

Some of the plants for Mr Bentham have been communicated to you before — of my Gerardia stricta I had no specimen left — but will collect it again next month. I hope you will send to him the specimen communicated to you. — Some are marked: to be returned which I expect back — they are my only ones, and not to be got again easily. —

Nuttall's Arkansas plants I have not, but should like to have. — I am gradually collecting materials for the Euphorbias, — but am in no hurry with them. — Also Asamogetons — Schweinitz's P. nefescens is common here in some localities! —

I know well A. Argyrocarpus, from written M.S. omni; Alkanna and texas. Then I have another distinct texan species with fleshy fruit, and 3° our A. trichocarpus. —

I have been fortunate enough to find again the Sida hispida? in the locality shown me last winter by Lindheimer, about 1 mile from here — but now between buildings and probably soon destroyed — I must collect seed.

Most of the texan seeds germinated here, some, e.g. Lesquerella multiscala are flowering. I shall save seeds. —

I made experiments about the germinating of Cuscutas — they grow easily and I am cultivating some now; they grow on any plant offered them, but prosper not on all equally well.

I have seen Short's Equisetum; amongst the a probably new species from Newbern N Carol. 4–5 feet high quite smooth! — Send me if you can in some pamphlet just a small piece of the stems with a joint — sheath of the following species, if it is not too much trouble to you: Equisetum pratense Ehrh (= umbrosum Meyer, Willd — E. hiemale Meyer — amphibium Reg — Drummondii Hook) E. boreale Bongard (from Sitcha) and E. variegatum (Niagara etc) have you such gigantic specimens for the southern Atlantic States? send a small fragment, if you can — our large one in the Mississippi valley is rough, E. robustum A. Braun. —

Cut the next page of for Mr Bentham if you think it worth while — I am expecting daily Lilidaum July No.

Yours entirely

J. Engelmann

The Polygonum Hydropiper here is in no respect distinct from the European — How is it that it is not mentioned in any eastern flora — is it not there? perhaps native here?

Helianthus atrorubens St Louis
occidentalis St Louis
grosse serratus St Louis folii omnibus alternis a? folii oppositis in the same locality together
rigidus; ad ripas, arenosis, glabris apice glomeratis s. longe pedunculatis — in rich prairie soil —; fol lanceolatis, oppositis in dry poor soil St Louis was the latter form from Texas
Maximilianus Schrad. Texas, Prairies, 4-7 feet high folii elongatis falcatis, canaliculatis (mostly with both edges clasped together or folded
rigidus Texas lower leaves serrate, much more than I have ever seen it here.
angustifolius Texas; I have so far got a specimen; I have only one other poor one for Alabama, which is part of a much stouter branching plant. the Texas plant is rarely more than 2 - 4 feet high not branching, few flowered ~~stem leaves crowded~~; other differences I have noted on another place, neither they are sufficient to distinguish a species or even a variety I do not presume to say

Texas, near Houston, collected by L. Lindheimer.
Helianthus Helianthoides α. et δ. stenophyllus — major? involucre smoother, shorter.
H. mollis — rigidus — angustifol.? — Maximilianus.
Vebesina virginica — Lepachys columnaris — Echinacea angustifolia Spil — Coreopsis gladiata — C. Drummondii coast of Galveston
Bidens frondosa & bipinnata — Spilanthes Mettellii? Anthemis cotula
Silphium laciniat. Rudbeckia nitida & laciniata Helenium tenuifolium, Leptopoda fimbriata, brachypoda Palafoxia texana
Galardia lanceolata; pinta or Galardia lista δ — Marshallia caespitosa
Eupatorium texanum Senecio hieracifolius — Gnaphalium spicatum
G. plantaginum, polycephalum & β. adenocaulon Carlia ovata
Cirsium horridum — C. virginianum (without any bulbs or tubers on the root)
C. filipendulum n. sp. Centaurea americana — Apogon humilis
Cynthia boscii? Lactuca sanguinea? Pyrrhopappus carolinianus
fol inferioribus pinnatifidis s. integris. Sonchus asper
Elephantopus carolinianus Vernonia species or varieties
Eupatorium serotinum lycopifolium rotundifolium parviflorum
(perfoliatum not to be found near Houston!) ageratoides incarnatum
Conoclinium coelestinum Kuhnia eupatorioides Mikania scandens
Liatris mucronata (& lanceolata), Pyrrhostachya squamosa
scariosa punctata elegans Aster scopularius? tubercularis?
A. tenuifolius, diffusus, Aster patens β. gracilis — phyllolepis
simplex azureus dumosus multiflorus pilosus
Boltonia diffusa Erigeron strigosum tenuifolium canadense? scaposum
Gutierrezia texana — Chrysopsis graminifolia, pilosa
Helianthus scaber. Solidago tortifolia, odora, Boottii
speciosa — altissima — Lindheimeri — canadensis
microphylla — tenuifolia — leptocephala — rigida — gigantea

Bonichia fuscescens. Pterocaulon pycnostachyum. Pluchea camphorata
fatida Cifuos & Cifuos β. Baccharis halimifolia

I have sent you in my last letter a drawing of an Aster scoparius? and a small branch from the British prairies near the coast. Here I send you the whole plant, which you please to return; but also a branch of another very similar plant from the Prairies near Aransas but involucral scales different; Pehenia the same. Digitaria flavulosa St Louis, rare.

Lacospidium tyranum n. sp. agrees perfectly with Drummond's Decaspidium at St Louis of the disc flowers shorter than tube & always sterile! rays 20–30 achenia striate sparsely pilose (ovaria puberulent); achenia of the disc coarsely 4 angular, of the ray somewhat irregular incurved. Plant suffruticose decumbent very minute, lower cauline leaves spatulate sometimes obtusely 2–3 tooth, upper ones usually semi amplexicaul on the downs of Galveston Isle & with smaller Drummond's specimen – carolinian – St. Louis – the pale to Drummond.

Cosmium filipendulum n. sp. sent last summer, near C. dissolvens? heads hence as large as in C. virginianum, fibres of root enlarged, acute at base & top hollow filled with loose cellular tissue and air. leaves more divided than in C. virginianum.

Liatris canescens n. sp. sent last summer, very near L. mucronata DC. Digitata radice tuberosa multicipite caule foliosa, foliis linearibus basi dilatatis sunt inferioribus, apice calloso obtusis, insulis paucioribus, spicis densis brevibus; capitulis subsessilibus approximatis 4–5 floribus, squamis paucis (subocto nis) appressis, purpurascentibus lanceolatis acuminatis, nudis (non mucronatis) ciliatis, pappi brevioribus, exterioribus brevissimis, achaeniis glabriusculis, pappum plumosum aequantibus.

Found most frequently on Galveston Island April & May. Distinct by the short spike, larger heads (.5–7 lines long) lanceolate scales, much larger, smooth or a little scabrous, achenia not shorter than, but equal to the pappus, also by the leaves dilated at base, which in L. mucronata is only the case in the inferior leaves; and calloused & obtuse not "very acute" at tip; and involucre of the heads of flowering April & May in the other only the September.

Coreopsis grandiflora & C. tinctoria! what is the difference? outer scales of involucrum are also ciliate, achenia finally winged.

Echinacea angustifolia DC. = E. pallida Nutt. very similar to E. purpurea Moench which I take to be the common form in Missouri & Illinois. There is perhaps some difference in the seed? E. angustifolia is a much smaller plant, peduncle long, fully thickened at top, head hemispherical

St Louis Sept 15th 1843

My dear Doctor

Your last letter was received about 6 weeks ago; I answer it now, expecting that the answer will find you on your return. — Write me soon, whether I shall send you any roots. I am afraid that the long detention on the route will make it very difficult, to get any safely to Boston. Nobody, that I know of would charge himself with such a box; I can hardly get them to take small parcels of plants along; so I would be obliged to entrust them to forwarding merchants. Tell me what I shall try it — at what time I shall send them off (probably not after the middle of October) and how I shall pack them. — Write me what of my or Lindheimer's seeds, have come up — so that I need not send them twice. We have cultivated some here, not many; nothing of great importance has come up. — I wish I had a place to cultivate all our Asters, Solidago, Helianthus etc — that will be all important to elucidate these difficult genera. — I am studying Helianthus this season; but of that afterwards. Has my notice of Geyer's plants been printed? I have sent 17 packages to Wiley & Putnam; it would be well to add to each copy my notice. — Astre dumosus there is probably the also A. fragilis. Gutierrezia aurea is certainly wrong, but I do not know what it is. — Phacelia fimbriata is the work Ph. Purshii of Buckley — Then there may be some mistake in the Gramineae & Cyperaceae; — which you will do me a favour in notifying me if you have leisure for doing so.

You get here a monography of Equisetes, which I wish you to insert in the January No of Silliman if possible. — I have examined them carefully this Summer again, and the additions to Brauns treatise are the result. — You see that I have made use of your name in the request about Chara — I hope you have no objection, — else you may alter that.

Of Geyer & Linden nothing yet — of Lindheimer I have news — he has been collecting on the Brazos — been sick — returned to Houston — and, among failing sons prevent his going to San Antonio, but will go there early next spring. I expect soon about 1500 specimens from him. —

Have you got a parcel of plants by Wiley & Putnam — where I sent it together with a number of others i.e. Mr Carey, Brownne, Curtis etc. — Will it be well to send all things addressed to Wiley & Putnam? for you

You will have got a letter from me dated July 27th with a few notices for Dentham, accompanying a small parcel. — The Germander sixty have collected again two weeks ago but in this dry season very small — it appears to be truly distinct from pinnatum & passiflorum. — I have never seen Nuttall's Arkansas plants in Am. philos. Mag.

Did I tell you that is a letter Lindheimer (by the way don't dub him Doctor, he is much too modest to assume that title!) sent me a few flowers of Cercotoe; one is a large splendid variety of C. neocaledonicus growing on Lycium etc on the coast — the other is a new species and one of the section of C. Ophelanthi, which has only few close relatives. I have called it C. mucronata. — I should like to see the Oregon species! — — Mr Curtis has sent me the true C. pentagonus, undoubtedly wishable from you. Virginia specimens!

We have here absolutely no Ericaceae Pyrolaceae etc — The only plant belonging to that neighborhood here is Monotropa uniflora — 20 miles south west, where the Cedar region and the pine region begins, is a Vaccinium of which I have seen the large blue berries in Market here, but no specimen yet. In Arkansas I have collected a great many species of Vaccinium etc. —

Now to your Notes on the plants sent to you.

Gymnoid: — pumilus — further specimens have also satisfied me with the identity of this with C. pinnatus.

Astragalus trichocarpus, is it not specifically distinct from A. Nuttallianus?

Samolus ebracteatus (is it not found in the U.S.?) has only 5 stamens, with, of the 5 sterile ones, of the true samolus.

Of the queer little Grass called by Nees as a new genus I have got only half a dozen specimens male and female — diœcious! — The Ranunculus must be more studied. Is the tubercles on the fruit vary?

Solidago missouriensis — I have examined this plant carefully this season; and am inclined to think you are right that all or most of what we have here is argutus β. — but it is so variable that some specimens can not be distinguished from S. missouriensis and I confess I do not know any characteristic difference between them! It seems strange, but I am not satisfied about it. Both are the latest species in July & beginning of August — before any other — by the end of August we do not find any more — On our barren hills in hazel thickets & Oakwoods is plainly S. argutus and var β — sometimes with broad deeply serrate sometimes with entire narrow leaves — always more or less serrated. — In the rich low prairies, the plant assumes the form of S. missouriensis leaves narrower, more distinctly serrate or not — in both the branches of panicle pyramidal or more frequently level topped. — flowers & seeds the same! — I shall send you more specimens —

Solidago petiolaris — I should never have looked for one plant under that name for some time — you say it is S. angustifolia. I thought so too — and it may be so — but ours grows in high dry prairies far from the sea, stem — all my specimens ascending at base, leaves not short, heads rather large, not small; diœcious 11–13, ray flowers 6–10.

Solidago microphylla — I have only one specimen of this interesting plant, it lay amongst specimens of S. altissima

Aster undescribed: I know not and should like to get specimens.

A. dumosus the same.

A. tenuifolius humilis fol. lateribus is most certainly not A. tenuifolius. I have sent a wrong specimen. I have examined it over again this fall: the prairies where I collected it last year — The heads are entirely those of A. tenuifolius — distinguished from all our other Asters by the regular bell-shaped involucre — all the transitions to the high common narrow leaved form are there. — A. tenuifolius is our earliest Aster.

Vernonia — all the Texan ones are V. angustifolia — different varieties but here we have not that species — All ours that I send you you want to refer to V. fasciculata — but that can not be if I recollect what I send you right. — There were a specimen of V. fasciculata, one of our common form of prealta, one of this, but calyce subsquarrose (nearly V. Baldwinii), one of V. prealta, approaching V. Arkansana, V. Arkansana itself, several forms of altissima, and probably also V. Baldwinii.

Helianthus I am examining now — but it is a perplexing genus. The forms vary very much in pubescence, roughness, form and even texture of leaves — size of flowers, even shape of ligulae, shape of involucre etc —

H. hirsutus is very variable as to size & shape of leaves, but mostly easily distinguished: all forms, — A remarkable form with ovate lanceolate appressed short scales of involucre! another form where the leaves are not so abrupt at base, but attenuated like H. rigidus. In the first Helianthus here, in August. H. doronicoides very large with broad leaves, the common form at most places — other, lower with elongated lanceolate leaves — others very rough — approaching the form which I send you (between H. dor. & H. lætiflorus you thought) — all these grow together and are distinguished at first sight by the long linear ligulae (mostly 13–15) another form with broad but small leaves 2 feet high very rough — and shorter broader ligulae, grows on dry soil

Then the remarkable form (near H. Catiflorus) always in wet prairies with large quantities of H. grosse-serratus — very rough, leaves somewhat rhombic very stiff — thick — but below always soft

the another, perhaps the true H. Catiflorus — very similar to the last, but leaves less soft below, scales of involucre shorter, adpressed — then H. rigidus — leaves like the last strongly serrate to entire, ovate lanceolate to linear — scales always adpressed — ~~dirty purple~~ — or yellowish only the stem with a little Darkish — getting darker in the press: looking quite yellow in the field. — I shall send you this series. —

Cambridge Mass.
Sept 1st 1860

Yours Truly
A. Gray

I have cultivated Cuscuta Coryli in a flower pot, and nothing is easier. the germinate well; I have all our species germinating last spring — threw the away and this one (C. Coryli) came up without my wish! I fed it with Prunus, Portulaca, Viola, Allium, Euphorbia, Aster, Chrysanthemum indicum — etc — on the two last it grew best, also on Verbena hybrida, but came to flower also on the others — only on Allium it died with the plant. Write me soon

Yours truly
G. Engelmann

Recd Dec. 10.

St Louis Nov. 22d 1883

My dear Doctor,

I was too busy in my medical practice this fall to do much for you in the root or seed line and the little I have is not worth while to send. — Berberis Lindheimeri has also flowered, but no seed. Of the Penstemons we have seeds, besides that Scabrum has flowered, but no ripe seeds, Diabenitonia, no flower, Monarda, Dorithii, Lyoni and some others no flowers yet — Eglates flowered — I must still insist on the sterility of the dir! — Melandrium not yet in flower. —

Could you not open one of Geyers parcels and reexamine the plants, at least some of them, before the notice is printed. I will tell you which you would have to examine which can be of very little trouble to you:

58. Aster dumosus is probably, according to your notice in a former letter A. fragilis. (I do not know A. Tradescanti at all)

82. Phlox glaberrima — Lapham calls is Ph. reverlata

91 Gratiola aurea. must be something quite different, perhaps Ilex.

87. Phacelia fimbriata is Ph. Purshii Buckley.

The Cyperaceae & Gramineae are probably also partly wrong.

I wish you would yourself encourage your friends and correspondents to send you Charge for Braun. Wiley has probably not opened the box at all — for there were amongst 17 sets of Geyers plants also a number of packages for others especially one for Mr. Buckley, Mr Curtis, Mr Carey, for Prof Torrey and a small one also for you. Some none of the Gentlemen have. I got a notice that they have received it — I had requested Mr Wiley to send the separate packages to their direction. I wish you would enquire if you write to him.

I am anxious to see yours Cusonetus; from Mr Curtis I have got the true C. pentagona; from Lindheimer I have a new one, which I call C. mucronata, and a beautiful large-flowered spring form on the sea coast or Lycium of C. neuropetala, which appears to be the most common species in Texas, in the most different localities and seasons.

Helianthus? I do not know what I wrote you about this genus; we have not many species here, but they appear, some of them, sufficiently difficult. H. divaricatus assumes many different shapes, and approaches by some intermediate forms to tuberiflorus, and by this to rigidus !! Whenever you want to know what I have seen, I will attend you in witness and write you about it more fully. —

I have found here in our Lakes the true Centotheca demersa, and no other species! —

I continue to examine the Euphorbiae, and have got some species which I find no where described also. two from the upper platte rivers; one from Texas etc.

I have thoroughly examined our Amelanchiers — some years ago I have found one specimen of Elliott's A. canadensis, never since, which appears to be not known to many other botanists; their A. canadensis is only a form of A. virginica with broader leaves, longer petioles, and a little larger seeds — A. canadensis Ell is nearly related with A. oligomorpha Nuttl (Sprg. Syst. III. 883) and ought to be called A. Ellottii. — On the Mississippi works with Polypus Drummondii I have found another species, which might be called A. monococca as it has one very large seed in the one-celled capsule — and linear nearly entire leaves.

Leptopodia Brachypodia I have collected late in October with yellow disc and partly pistillate radial flowers !! I shall send you specimens which I can only distinguish from Helenium autumnale by the much smaller less globose heads !! —

Now to our Collectors. Lindheimer has send me another box, with many very interesting plants — but they have suffered some by the moisture; he promises more before new Year — I shall wait for that before I send you any, but then you shall have a full set, and we will buy in to work them out. —

Linders is gone with one of the Oregon companies, and I have had no further news from him.

Geyer is gone with Sir William Stuart to the Mountains and from there with the Jesuits to a Mission in the Northwestern Mountains; — he will go from there next Summer to the Columbia and with all his collections to England. He send nothing, nothing but a short resolute letter for all my trouble, which I have had with him, and the 150 dollars which it has cost me to fit him out !! So much for honesty and gratitude! —

Another Gentleman who accompanies Stuart brought down a small collection, which I had half an hour to look at. He gave me two Euphorbias and a Croton which I do not know. Many of Fremonts plants were amongst them and of the Fremontia he had a stick 3/4 inch thick! —

Fremont I believe is gone over to Oregon and will not be back before next Fall.

Brown asks me for a paper of yours on Cryptophyllaea — have you a copy left to spare?

This winter we will have nothing to ~~send~~ distribute but Lindheimers Plants! —

With Regard to Francisco and the Express-line, I recollect to have seen a notice of it in the papers here, some months ago

Prof Asa Gray
Cambridge
Mass.

but I could not learn whether it went into operation. Francisco I believe is broke, and I could not find anything of him at the number given by you. — I will enquire further; it would be very important for us. — I have had no answer from Wirley, that he received the box etc, but hope all is safe; enquire for your parcel is it. — Write me soon

truly yours G. Engelmann.

St Louis Jan. 8th 1844

My dear Doctor,

I am much obliged to you that you took care of my box at Wiley & Putnam's, from Dr Kriesheim as I know already that he has received his package. — I have sent you by a friend of mine a large collection of Texas plants, and set of Lindheimers collection for sale, together with a few others of which there are only a few specimens. His fall collection has not been received yet. I have numbered them and referring to the numbers, we may always be sure as to the plants we are speaking of. — I have only superficially examined them, but shall soon go to work with them. — The package will in all probability be with Messrs Wiley & Putnam before this letter reaches you. If you have any thing for me send it soon to Messrs E. & T. Clapp Pearl Street New York where a friend of mine Mr Tewes is at present, and will return here in March.

About a week ago I was gratified with a package from Mr Sullivant containing your Mountain-Cacutus. I have carefully examined them, and found two new species amongst them, but strange to say both of them have been in my possession for some time, without my recognizing them as new or distinct, but when I saw your fine and complete specimens in all stages of development, I was forced to see the distinctions.

1. A new Cereus, which I call C. oxygona. Mr Buckley has sent me a small flowering specimen a year ago in which I recognized the elongated ovary, but did not suppose it sufficiently distinct from C. vulgaris. But your complete set in different stages and from different localities, especially the large acute fruit, and the fact that other plants of the southern mountains have near relatives in the western lowlands (Baptisia alba tinctoria, Phaselia limbata etc.) obliged me to look for constant characters, and I believe I have found them. I ~~send you~~ transcribe the characters:

Cuscuta oxycarpa caule ramoso, floribus pedunculatis, cymoso-umbellatis, 5-partitis; tubo corollae globoso-campanulate, calycis segmenta ovata obtusa, leviter crenulata et laciniis limbi ovatis, obtusas patentis (demum reflexas) duplo superante; staminibus limbum subaequantibus; squamis fimbriatis (convergentibus ?) basi inter se connatis; stylis filiformibus ovarium stylopodio ejusdem longitudinis coronatum, elongate-pyriforme subaequantibus; corolla cum staminibus marcescente ad basin capsulae (maximae) aculeae persistente.

The tissue of the corolla is always destitute of the large pellucid dots or air cells constantly observed in C. vulgivaga and appears to be composed (especially about the tube) of regular somewhat elongated sexangled cells easily observable on the dried specimens with a glass. In the common species the cells are linear, much elongated and interspersed with the large air cells. Flowers & fruit are nearly twice as large as in C. vulgivaga.

You collected it in Ravines in Western Virginia, in Hearts Valley, on Negro Mountain.

2. A new Lepidanche (which we will have to consider a subgenus to which C. cuspidata from Texas is the connecting form) at least a new one to me, but probably the true C. compacta Chois. As his plant is something like my Lepid. adpressa, and is from Carolina & Alabama I have hardly a doubt that you will find in it your Negromountain Lepidanche! Just compare the figures & descriptions, and let me know the result! —

But both Lepidanches are perhaps still more closely allied than the two species ~~just~~ above described. The principal difference is in the more slender corolla, which exceeds the scales of the calyx considerably, and is about half as wide, ~~and thus~~ as L. adpr. and whose lobes are much narrower. The consequence is that the fruit (though really nearly globose) looks much more pointed. The whole flower is smaller than L. adpressa.

Lepidanche compacta floribus arcte sessilibus, glomeratis 5-partitis sepalis sub novem, leviter crenulatis concavis adpressis orbiculatis interioribus minoribus; tubo corollae cylindrico calycem et laciniis limbi lineari-oblongas obtusas duplo superante; staminibus limbi brevioribus; squamis pinnatifid-laciniatis; ovario cum stylopodio stylos subaequante; capsula globosa subacuta corolla marcescente obtecta.

You found it on some evergreen bush (what is it? with spinulose-serrate leaves) some on Alnus? In Buncombe Co and at the base of the Negro Mountain.

Your fragment on Prinos glaber from Alabama sent to me about a year ago, is the same! — who collected it?

a two flowers of Lepid. comp. on Prinos
b one ripe fruit on Carpinus
c three sides fruit on Alnus
d flower of C. oxycarpa
e ovary
f. flower of Lepid. adpressa

a is a drawing made from your specimen from Alabama on Prinos; as the N. Carolina specimens were rather past flowering.

3. Your Lepidanche from Western Virginia on Carpinus, Similax etc is our L. adpressa!

4. Cuscuta Coryli on Corylus western Virginia, on Helianthus and other also western Virginia. The calyx is a little larger, the corolla less deep than here, the scales very rudimentary, one or two filaments only or wanting. The corolla hardly covers the capsule when ripe?

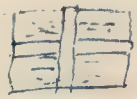
Both 3 and 4 I have not seen from any other localities than Ohio.

5. The only specimen of C. vulgivaga from the bank of the Catawba between Morganton & Asheville! Did you not collect more of it, because mowing it as the common plant, or is it really rare there in the Mountains, and does in its place C. oxycarpa appear?

Will you publish any thing about the result of your excursion? you may then in a note publish these two Cuscutas also — or we can do it in a note to the account of Lindheimers Collection, where I have to say much of Cuscuta — I believe I have told you that a new one, C. cuspidata, is amongst them.

Jaime Lindheimers has flowered here and in Carlsruhe Germany, was here and there admired on account of its rich flowers and has been lost again! I have no seeds. Have you preserved it? Of Oenothera rhombipetala I will send you seeds as soon as I can get them from Dr. Riehl, who cultivates these plants 10 miles from here! Is it not the same as O. biennis? I am very much inclined to think so. I have no seeds from Lindheimer this year

so far — but hope to get some with the next box, which I expect every day.

Send to Braun if you please a few copies of the Equinoctial paper and of Gyger's Catalogue, fold them up to the size of a large letter, seal or glue a strip of white paper crossways over it so:  so that it will be seen that it is printed matter and direct it: Prof. Alex. Braun Carlsruhe, Grand Duché de Bade, Allemagne — and send it by a Havre packet — I hope in that way it will arrive safely. I hope you will get Charms for me. Who is the Greene in Boston, whose Charms he has seen?

Very truly yours,

P. Engelmann.

Prof. Asa Gray
Cambridge
Mass.

F. Lindheimer's Texian collections.

1 Ranunculus texensis Engelm. & Gray [I have sent it to you without number I believe, that I have sent you as No 1 we will call No 3; No 3 is probably equal to No 5.]
This species is nearly related with R. pusillus. We subjoin the diagnoses of both and of the following, also an undescribed species, which have all probably been comprized under R. pusillus.

Ranunculus pusillus Poir. caule placido, submuroso, glabro, foliis petiolatis inferioribus ovatis dentiulatis, superioribus linearibus lanceolatis, basi petiolorum membranaceo-dilatata et bracteis ciliatis; petalis sub-5 lineari-spatulatis sepala ovata obtusa decimo subaequantibus; staminibus pluribus; carpellis subglobosis, obtusiusculis, laevibus in capitulum globosum congestis.
Wet places & margins of ponds. Missouri. Many.

1. Ranunculus texensis E & G. caule erecto, ramosissimo, basi hispido, foliis petiolatis inferioribus ovatis subcordatis dentiulatis, superioribus lineari-lanceolatis [illegible]

fasciculated fleshy fibres; stem simple and one flowered in all our specimens in the Prairies it is erect 10-15 inches high, in woods, under shrubs it grows 1½ to 2 feet high and climbs a little by the petioles; leaves from simple to decomposed last divisions always lanceolate, or linear-lanceolate, acute at both ends; flowers variable in size, 1½ to 2½ or even 3 inches in diameter, tube short, lobes spreading; carpels not seen. It appears to be nearly related with C. cylindrica Dns but belongs rather to the first section of Clematis with erect herbaceous stems.

[I intended the name of C. heterophylla, but in many specimens the lower entire leaves are lost; it would be therefore not very appropriate]

5. Clematis reticulata Walt.
6. Anemone caroliniana Walt flowers in some localities rose colored, in others pale purple
7. ~~Ranunculus populifolius~~ Coreidis populifolia Pk 8. Streptanthus hyacinthoides thoks g. Cristatella jamesii T&Gr
10. Cleomella mexicana DC. 11. Polygala leptorandis Fel 12 Polygala incarnata Lin other

14. Drosera brevifolia Pursh 15. Helianthemum capitatum Nutt (ex Torr. & Gr. Fl.) H. polifolium Tally non DC Pl. franc. IV. 823, DC prod I. 283 which as the older name must be retained. Another name would be preferable to capitatum, perhaps H. filipes or H. heteranthum.
16 Lechea drummondii
17. Hypericum gymnanthum Ex Gr. (Annual) caule simplici, erecto, quadrangulato, foliis e basi cordata ovatis, amplexicaulibus 5-7 nervis, pellucido-punctatis, cyma dichotoma, pedunculata, aphylla, laxiflora; bracteis subulatis; floribus pedicellatis; sepalis lanceolatis, acutis, petala superantibus, staminibus 10-12; capsula ovato-conica calycem vix superante, unilocularis seminibus flavis cylindricis, longitudinaliter costatis. (trivialis)

Clayey soil in Pinewoods near Houston, June.

Very near H. mutilum, but apparently well distinguished by the erect simple stem, distant leaves, naked cyme, acute sepals and the smaller more evidently costate yellow seeds; in H. m. they are larger, somewhat brownish and hardly costate. The leaves of H. mutilum are usually oval or oblong but sometimes they are also cordate at base. — Do the specimens of H. mutilum from Maryland and Arkansas, mentioned in T. & Gr. Fl. I, 165 belong here?

18. Sarothrotis drummondii T & Gr. 19. Paronychia setacea T & Gr.
20. Silene Antirrhina Lin β. subglabra; stem smooth, lower leaves ciliate at base, scabrous on the margin, upper ones with smooth margins.
21. Silene Antirrhina Lin γ. lacerata stem & leaves smooth, with entire smooth margins. Galveston island near Thicket, April. — In the common form the stems are scabrous at base, usually viscid at the upper internodes; the leaves are ciliate — scabrous on the margin and the lower ones also scabrous on both surfaces. In Texas it is found together with the above mentioned varieties.
22. Linum Berendieri Hook certainly a distinct species, not a variety of lin. rigidum, as suggested by Torr. & Gray, Fl. I, 204.

Linum Berendieri Hook. viride, caulibus pluribus s. e basi ramosis humilibus, erectis s. adscendentibus ramosis; foliis lineari-lanceolatis, uninerviis, margine laevibus, sepalis lanceolatis acuminatis, 3-nerviis glanduloso-ciliatis, stylis ultra medium connatis.

In the Quicksand of the downs of Galveston island common April & May. Perennial? — Root long foliform; the flowers are larger than in any other species of this section, petals yellow, with a reddish brown spot at base.

The distinctive characters of Linum rigidum Pursh: glaucum, caule erecto simplici, apice corymboso-paniculato, foliis linearibus 3 nerviis nervis submarginalibus, marginibus scabris; stylis distinctis.

23 Xanthoxylon ~~triacanthum~~ Carolinianum Lam
24 Sida Lindheimerii T & Gr. stellato-pubescens, caule erecto ramoso, foliis oblongo-linearibus basi subcordatis, serratis, petiolis brevibus, stipulas lanceolato-lineares subaequantibus; pedunculis folia aequantibus s. superantibus, calycibus hemisphaericis, segmentis late ovatis acuminatis, carpellis 10-12 laevinoso-rugosis saepe pubescentibus, breviter birostratis.

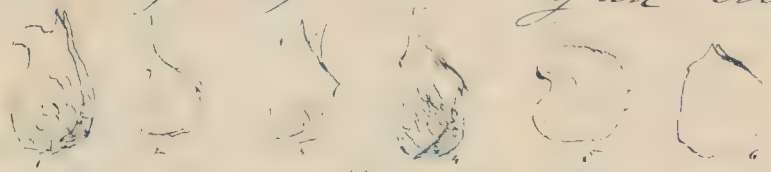
Prairies east of the Brazos; June. ⊙? — Stem about 2 feet high

much branched, branches elongated leaves 1–2 inches long, 1–4 lines wider; peduncles frequently longer than the leaves, articulated about 3/4 inch below the fruit. Flowers and fruit much larger than in S. rhombifolia. Apparently between this and S. filicaulis Torr. but easily distinguished from both by the linear leaves and by the carpels, which have much shorter horns and are lacunose and reticulated on the sides and back and pubescent on top; besides the erect horns they exhibit on their inner edge a point horizontally turned inward. Seed about twice as large as in Sida rhombifolia.

We find amongst the Lindheimers Collections ~~most~~ a few specimens of another undescribed Sida which we name

S. heterocarpa: stellato-pubescens, caule erecto ramoso foliis crassi subordinatis obtusis dentato-crenatis, inferioribus lanceolatis, superioribus linearibus, tuberculis ad basin foliorum subspinosis; petiolis brevibus stipulas setaceas superantibus. pedicellis solitariis s. in axillis foliorum fasciculatis, petiolo brevioribus; carpellis 5 (nigris) bicornutis apice puberulis, lateribus tenuiter rugulosis dorso membrana tenui evanescente clausa.

Together with Sida spinosa at roadsides, wastes etc near Houston, flowering in August & September. — Very near Sida spinosa distinguished by the narrower more elongated dentate crenate, not serrate leaves and principally by the black, not light brown carpells which are much smaller than in S. spinosa. they are rugulose (not lacunose reticulate) on the sides, they have a prominent point on the back which is wanting in S. spinosa, two broad ovate acuminate divergent horns do not separate easily and let the seed escape through a hole at the back and base which is originally covered by an evanescent whitish membrane.



1. Sida Rhombifolia 2. S. rhombifolia
3. S. heterocarpa 4. S. spinosa
5. S. hispida 6. S. scabrella.
All my American Sidas NB. Sida hispida

from Illinois is very probably Lindheimer, Rant. — not recent, it has the peduncles and the external calyx as Rant describes them; but the corolla is a strange one. — S. heterocarpa I shall send you later, it was amongst specimens of S. spinosa, a strange plant with its carpells spinous at base, also a little between the horns; — in our S. spinosa both values separate easily — and they

25. Malvaviscus Drummondii Torr. 26 Vitis bipinnata Torr.
27. Vicia Ludoviciana Nutt
28 Vigna glabra Tau.? pubescent, leaflets broadly oval, calyx 4-toothed, flowers hardly larger than those of the garden bean, carina deep, vexillum pale yellow, legume compressed, somewhat torulose, black, pubescent with whitish hairs, seed black with white hilum. — Thickets near fresh water Houston, June & July.

β. angustifolia leaflets lanceolate or linear lanceolate, on newly limed near brackish water on the coast of Galveston bay, July.

29. Rhynchosia minima DC. 30 Rhynchosia mensispermoidea DC.
31. Dalbergia Longifolia DC.
32. Tephrosia ovalifolia Nutt β. argentea, pubescence always white or silvery, lowest leaflets remote from the stem, leaflets cuneate retuse or emarginate on both sides strongly ribbed, above smooth below silky-pubescent, stipules somewhat persistent, calyx teeth equal to the tube and woolly (specimens

from Houston) or shorter and strigose (from the Brazos). Flowers perfectly white, soon turning to pale scarlet; vexillum green in the middle.

Prairies from Houston to the Brazos, in flower from end of April to August. The specimens from Houston with a woolly calyx grew in sterile sandy soil and flower earlier; those from the Brazos have been collected in fertile prairies later.

33. Tephrosia Virginiana Pers. & holosericea T & Gr.

34. Indigofera lepto sepala Nutt; flowers beautifully rose-coloured. Root thick and ligneous; grows in clayey soil in dry prairies.

35 Psoralea Lindheimeri T. & Gr. subpubescens radice perenni, filiformi, filipendula; caulibus pluribus, elongatis, decumbentibus s. adscendentibus, stipulis lanceolatis, foliis trifoliatis, foliolis rhombeo-ovatis obtusiusculis, petiolo brevioribus sparse glandulosis; pedunculis petiolum aequantibus s. brevioribus; spicis capitatis paucifloris (3-6); bracteis ovatis acuminatis, calycis hirsuti dentibus lanceolatis tubum aequantibus, inferiore longiore; alis unidentatis, carinam multo-superantibus, vexillum subaequantibus; ovario glabro, stylo pubescente; legumine membranaceo, suborbiculato, rostro longe exserto recurvo ornato, transversim dehiscente, parte superiore strigoso pubescente, inferiore laevi, subrugoso; seminibus orbiculatis, compressis.

Sandy rather dry places of Galveston island, May 1843. ♃. Root filiform, often 2-3 feet and more long if forms elongated tubers where it reaches moist soil. Stems from 6 inches to 1 or 2 feet long. Lowest leaflets suborbiculate subcuneate at base; upper ones ovate; the uppermost rather longer than the petiole; but peduncles always shorter than petioles. Corolla purplish blue. This species is very nearly related with Psoralea rhombifolia T & Gr. as we have received from Mr Lindheimer a few specimens of this also, we subjoin a complete description, with the distinguishing characteristics. Compare with Mr. Greene.

Ps. rhombifolia T. & Gr. subpubescens, radice perenni filiformi; caulibus elongatis, decumbentibus, stipulis ovatis, acuminatis; foliis trifoliatis foliolis minutim glandulosis rhombeo-ovatis, inferioribus foliolis brevioribus, superioribus subsessilibus; pedunculis foliis ~~longiori~~ superantibus demum recurvis; spicis ovatis s. capitatis, pauci-(4-10)floris; bracteis ovatis acuminatis, calycis hirsuti dentibus lanceolatis tubo brevioribus inferiore eum aequante; legumine ovato, rostro hamato longe exserto ornato; parte inferiore laevi, superiore strigoso-pubescente, semine oblongo, compresso.

Sandy Prairies east of Brazos river June. — Well distinguished from the preceding by the elongated peduncles larger and generally more flowers (which are of similar structure and colour), by flowers usually in several distinct clusters, by the narrower leaves which are nearly sessile above; and by the oblong seed. It is probable that the legumes of this species are also transversely dehiscent as they are similarly constructed with those of P. Lindh. but we have not seen perfectly ripe ones. By this construction of the legume these two species form a separate section in the genus, or perhaps a distinct genus?

36 Bonnia obtusiloba T & Gr. leaflets obtuse, emarginate; glabrous and glandular on the upper surface, canescent below; calyx and legume glandular. Dry prairies east of the Brazos, nearly past flowering by the end of June.

6. It is very near P. floribunda Torr. The specimens from Illinois, Lowry and Arkansas have all glandular leaves, a glandular calyx and legume (not glandular in R. & Gr. flor. I, 300). It is distinguished from P. bethesiola by the narrower acute, not obtuse or emarginate leaflets, thinner pubescence on the lower surface of the leaflets, smaller stipules, narrower and more acute calyx teeth, and the light or yellowish brown seeds (in P. obl. dark or blackish brown.

37. Amorpha paniculata Torr. & Gr. a large and stately plant, 6-9 feet high, ~~[illegible]~~ panicle sometimes 1½ foot in diameter, spikes 6-12 inches long. In thickets near brackish water near Galveston Bay June and July; and near fresh water west of the Brazos, in July.

38 Amorpha glabra Desf. DC prodr II 256. I must leave this to you whether it is the same as A. Caroliniana Croom, Torr. & Gr. fl. I, 305. It accords better with Delaudille's character "foliolis infimis a caule distantibus". The two upper teeth of the calyx are short and mostly obtuse the three lower ones are sometimes long, acute, or the lowest one only long acuminate. Wet Prairies and wet spots in open woods near Houston, April, also in brackish prairies near the coast in July.

39. Dalea aurea Nutt

40. Petalostemon obovatum Torr. & Gr.

41. Petalostemon phleoides Torr. & Gr. β. microphyllum Torr. & Gr. on sandy elevations in the Prairies west of the Brazos, fl. in July. Remarkable by its grayish appearance and very small leaflets. We have received another variety of this species, collected in May on Prairies of Galveston island. It is perfectly glabrous with the exception of a few scattered hairs on the obovate or oblong linear blue leaflets (4-7 pairs) the stem is branched from the base, bracts smooth, glandular, margin of glandular calyx pubescent.

42. Petalostemon violaceum Mich. β. pubescens distinguished from the glabrous form of the northwestern States by the pubescence.

43 Petalostemon multiflorum Nutt

44 Trifolium reflexum, &c.

45. Astragalus Nuttallianus DC. β. trichocarpus Torr. & Gr. grows together with A. Nuttallianus and A. leptocarpus on Galveston island, all flowering in April, but the last one grows on the quicksand of the downs, towards the sea with Linum Berendieri, Cakile, Oenothera Drummondii, Bigelovia graveolens, Euphorbia Drummondii and others; A. Nuttallianus is found in Prairies in the interior of the island and β. trichocarpus only on soil composed of fragments of shells on the west of the island towards the bay, with Guillardia picta, Scutellaria Lindheimeri etc.

This plant may prove a ~~distinct~~ good species, distinguished from A. Nuttallianus by the much more curved hairy shorter legumes, fewer seeds (7-8 in each cell in our specimens of A. Nutt. we count 10 to 13 in each cell. A. leptocarpus has also 10 to 12 in each cell), and by the oval, not retuse or emarginate leaflets.

46 Astragalus leptocarpus Torr. & Gr.

47. Mimosa strigillosa Torr. & Gr. in hard clayey soil, frequently in the roads near Houston April ~~and~~ to June. Calyx minute, campanulate, indistinctly 4 toothed, 4 petals united above the middle, 8 stamens, heads in our specimens always oblong, even before flowering.

48. Acacia lenta Lear. bracts ciliate deciduous, calyx 5 toothed, ciliate or glabrous petals 5 united at base, twice the length of the calyx; stamens 10 twice the length of the petals; ovary a little hairy on top; style rather longer than the stamens. — Stipules lanceolate, leaflets mostly reticulated with large meshes, sometimes only one nerved, or indistinctly 3-nerved. — Stipe of ripe legume ~~[illegible]~~ 2-3 lines long.

49. Acacia hirta Nutt. Stem, petioles, pedicels and peduncles densely, sometimes canescently hirsute with spreading hairs.

50 Acacia hirta Nutt β. glabior, nearly glabrous, or sparsely hirsute with short rather appressed hairs. — Open dry woods near Houston May and June; frequently again in September. — I ought to remark here that many species which have farther north only a short flowering season in Texas bear flowers through the whole summer, and many others flower a second time after the usual rains of August and September have ~~[illegible]~~ revived vegetation.

51. Vachellia Farnesiana W. & Arn. This is nearly the only shrub on Galveston island, it there reaches the height of 4 to 7 feet and forms considerable thickets. The time of flowering is very short about the end of April or in late seasons beginning of May. Flowers odorous. — An indigenous plant.

I have sent you also a species of Desmanthus. I find in examining it that I have 2 forms of Desmanthus from Texas but only 2 or 3 specimens of each. I do not recollect which one I sent you. They have ripe fruit and flower buds so I can determine them. They are near D. lacustris but apparently different, not floating, but growing in wet soil; 1, prostrate, ~~[illegible]~~ pinnae 2-4 pairs, leaflets 30-50 linear oblong 1 nerved ciliate, stipules ovate setaceously acuminate sometimes; peduncles rather shorter than leaves, head globose about 12 flowered. Bract glabrous, fl. subsessile, calyx scales glabrous, lobes lanceolate, petals united to the middle, longer than the calyx; legume oblong stipitate, stipes about the length of the petals. Sterile flowers without anthers, filaments flat. 2, ~~[illegible]~~ more hairy, ~~leaf~~ pinnae 2-3 pairs, leaflets 24-50, oblong, more ciliate, hairy on the upper part of the back, stipules as above, flowers about 15 in a rather oval head, bracts and calyx teeth ciliate, petals one lower = 1. — probably a hairy variety of 1. You will decide, whether this is Drummond's plant or not.

I have also a few specimens of Polanisia trachysperma Torr. & Gr.? I am inclined to doubt that that is a good species. I find in my herbarium 1, common form, stamens 8 only, seed turgid, finely reticulose or reticulate, some with indistinct tubercles, sepals reflexed. 2, specimen from Fort Gibson, similar but all flowers only staminate (I find most specimens polygamous); sepals acuminate. 3 Hot Springs, Ark. sepals acute or acuminate as long as the claws of petal; 16 filaments, not twice as long as petals, style half the length of ovary. 4, Texas, leaves rarely with 4 or 5 leaflets, sepals acuminate, shorter than claws of petal, 14-19 filament about twice the length of the emarginate and frequently denticulate petals, style rather longer than ovary. Ripe seeds not seen, unripe ones not different from P. graveolens. How are the petals of P. uniglandulosa. Do they all belong together?

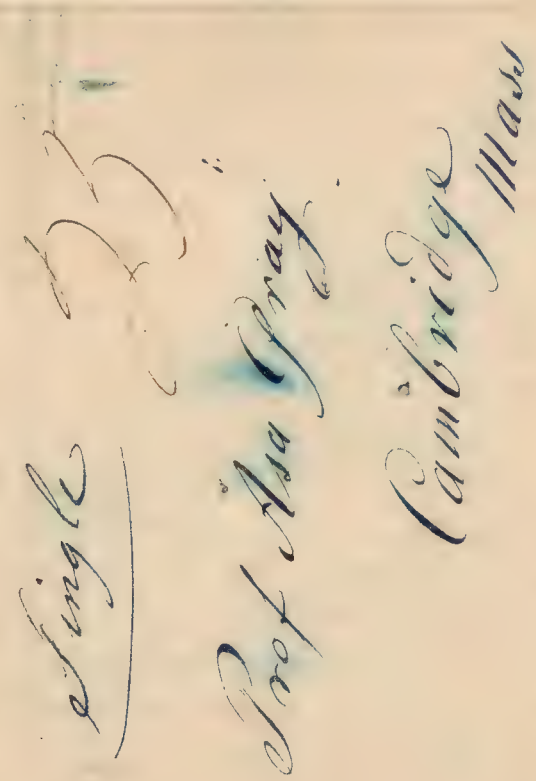
All specimens of Baptisia leucophaea from Texas have smooth glaucous stems and broad rhombic obovate leaflets not woolly but ciliate, still I find no other difference; therefore: β. laevicaulis. —

81

St Louis Febr. 17th 1844

Dear Doctor,

I have received your letter yesterday, and had before prepared the inside of this letter, so that I send it away now. Lindheimer has lost his full collection, ~~the~~ all his seeds and nearly his life; so, all we have to send is the small collection in your own hands, and the sooner it is prepared the better. I have gone at it and shall send my manuscript as I get it ready. You will make such corrections and additions as necessary. As soon as you approve or correct my names I shall print the labels. How put our names? I thought those new plants especially of the lower orders, which I must leave you to describe we put Gray & Engelm. and to those which I describe, Engelm & Gray. However as you think proper and right – perhaps only: Gray to the one part & Engelm to the others. — — How is that with Sir Boy & Pelnam? Only Mr Thieskum has announced to me the receipt of his package – nobody else – I suppose they have not been delivered. From the Acad. of Philadelph I got a letter the other day, not mentioning any thing; ~~but~~ they send me 12 or 14 species of Cacti. — W. & P. have probably too much to do, to attend to such things, when they can make no money by it!?



Please to compare the drawing of Okeisy's Case, comparte with my L. adpressa & L. comparte (the western and the Mountain plant) and tell me which it is, either my supposition is right that the western plant is undescribed. — How do you like Brauns disposition of Hrameria? — I shall continue in that way as far as your flora is published; further on, I can not do so much and must leave more labor to you. Still I will try my best, ~~not~~ to take as ~~little~~ as possible from your much occupied time. — I have only few seeds from Lindheimer, for example Polaloist. obovata and a few other, which I will send as I come. — In the letter you will find seeds of Rhoetheca Monadelpholis, raised here

Yours truly,
G. Engelmann.

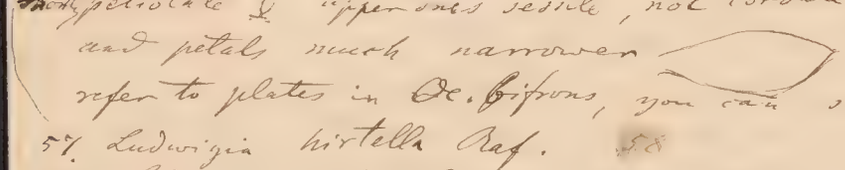
52. Lythrum foliosum n. sp. radice perenni, caule erecto, ramoso, quadrangulato, angulis angustissime alatis; foliis sessilibus, lanceolatis, glaberrimis, subcoriaceis, margine integris; bracteolis pedunculum brevem aequantibus s. superantibus; calyce profunde 12-striato; dentibus exterioribus longioribus erectis.

Wet Prairies, ditches etc Houston to the Brazos. May to July. — Leaves crowded always acute at both ends and closely sessile; flowers 6- sometimes 7 or 8-androus. I find amongst our specimens two varieties: 1, staminieum, filaments as long as the petals, style not exceeding the calyx, stigma smaller, petals apparently larger and darker coloured, ovary frequently sterile? 2, stylosum, filaments as long as calyx, style as long, or longer than the petals, stigma larger; petals apparently a little smaller and paler.

Lythrum alatum Pursh has not been found in Texas by Mr Lindheimer. It is distinguished by the rough margin of the membranaceous, not leathery leaves, bracteoles shorter than the peduncle, and outer teeth or processes of the calyx at length recurved. It is probable that in this species also both forms, staminieum, and stylosum, occur and amongst a dozen specimens at present at my disposal, I can only find the form with long filaments.

Is Lythrum foliosum the same as L. lanceolatum Ell? and must that name be restored? Then L. alatum must be reduced to var. α. of Torr. & Gray Flora I, 480, and has always subcordate leaves, var β. & γ. belong to our species.

53 Oenothera Drummondii Hook 54 Oenothera linifolia Nutt. 55. Oenothera speciosa Nutt

56 Oenothera rhombipetala Nutt I must ask you again whether this is not O. Biffora? My specimens from Arkansas is a very poor one but stem and leaves are silky, lower leaves ~~shortly~~ petiolate & upper ones sessile, not cordate, lobes of calyx without that ~~recurved~~ appendiculate, and petals much narrower  not as in our plant; as you refer to plates in De. Biffora, you can soon settle it. —

57. Ludwigia hirtella Raf. 58

58. Ludwigia intermedia n. sp. strigoso-pubescens, caule erecto ramoso, angulato; foliis ~~linearibus~~ lanceolato-linearibus, acutis; floribus breviter petiolatis, bracteolis subulatis; lobis calycis lanceolatis, acuminatis tubum aequantibus, petalis (flavis) brevioribus, capsula elongato-turbinata dimidio brevioribus.

Dry Prairies, roadsides, Houston, June to September. Also in Alabama (Mr Buckey!). — This species is intermediate between sections x and xx in Torr & Gray Flora I, 522; flowers nearly sessile, smaller than in L. alternifolia and the two following species, but they have a distinct stylopodium. — Very near L. linearis but distinguished by the short strigose pubescence, the branched many angled stem, the want of stolons, the want of the two resinous glands at the base of the leaves, by the short pedicel, the larger bracteoles, the longer lanceolate lobes of calyx, which give the flower bud a long acuminate appearance, that of L. linearis being barely acute, by the larger petals and by the smaller seeds which are only half as large as in L. linearis. [I have been so little differing explicit, as Mr Buckley and perhaps others have confounded both species].

59. Jussiena decurrens DC. 60 Gaura sinuata Nutt.

61. Gaura Lindheimeri n.sp. erecta, hirsuta s. pubescens, foliis infimis obovatis spathulatis, obtusis, lyrato pinnatifidis; foliis caulinis sessilibus lanceolatis, acutis, sinuato-dentatis (rarius margine crispis), supremis integris. Bracteis ovato-lanceolatis, acutis, ovarium superantibus, deciduis; calycis tubo infundibuliformi ovarium aequante, segmentis hirsutis duplo triplove breviore; petalis brevissime unguiculatis, subrhomboideis, calyce subbrevioribus; nuce subsessili supra, saepe attenuata, 4-angulata, acute carinata, faciebus supra ad medium carinatis transversim plicatis.

Prairies, from Houston to the Brazos; fl. in April & May and again in August and September. — Stems much branched, 2–4–5 feet high. The Spring specimens collected in Spring have larger flowers than those of the fall. — It appears to be near G. villosa Torr, but is distinguished by the larger bracts, and the subsessile ovate-lanceolate, not linear pedicelled fruit. — Fruit apparently similar to that of G. tripetala Cav, but never triquetrous, and calyx segments always much longer than the tube. —

Note. Mr Lindheimer has also sent a few specimens of the following undescribed species of Gaura.

1. Gaura exaltata n.sp. caule erecto, infra villoso supra adpresse pubescente paniculato-ramoso; foliis lanceolatis s. lineari-lanceolatis basi et apice angustatis, sparsim repando denticulatis, adpresse pubescentibus; bracteis linearibus deciduis; calycis segmentis tubum aequantibus, ovarium canescens bis terve superantibus; petalis spathulatis longe unguiculatis, calyce subbrevioribus; nuce sessili, ovata, subacuta, obtuse 4-carinata, nervis inconspicuis intermediis notata.

Prairies, margins of woods, Houston. Aug to Octob. Stems 6–9 feet high, growing in groups, often exclusively covering large spaces of ground. — Near Gaura biennis, but distinguished by the much smaller flowers, the oblong or spathulate long unguiculate petals, and the shorter and thicker fruit; — from G. parviflora by the short canescent ovary, and smoother leaves.

2. Gaura bracteosa n.sp. caule erecto, ramoso infra adpresse pubescente supra cano, foliis lanceolatis acuminatis, repando-denticulatis, adpresse pubescentibus; bracteis lanceolatis persistentibus, ovarium et fructum longe superantibus; calycis segmentis tubum aequantibus, ovario canescente duplo longioribus, petala oblonga unguiculata superantibus; nuce sessili ovato-lanceolata acuta, ~~canescente~~ canescent, obtuse 4-carinata, nervis inconspicuis intermediis notata.

Prairies near the Seacoast at the mouth of Buffalo bayou and of the Brazos. July to August. — Apparently 3 or 4 feet high. Near the last mentioned and G. biennis but easily distinguished by the long leafy bracts which resemble the upper leaves. Flower and fruit smaller than in G. biennis; fruit of the same shape, acute at both ends; much more slender than the fruit of G. exaltata. Petals smaller and narrower than in G. biennis and shorter unguiculate than in G. exaltata.

3. Gaura glabra n.sp. caule erecto, ~~supra ramoso~~, glabro; foliis sessilibus, lanceolatis repando-dentatis, glabris; bracteis lineari-lanceolatis, ciliatis, persistentibus ovario longioribus; calycis hirsuti tubo segmentis bis terve breviore; ovarium linearе hirsutum subaequante; nuce —.

Wet prairies near the coast near Lynchburg; beginning to flower in July. Apparently 2–3 feet high. Calyx (and flower?) very similar to that of G. Lindheimeri; but the ovary is longer and more slender. Distinguished from that and all others by its smoothness and green colour and by the large ciliate persistent bracts. — G. [illegible]

4. Gaura purpurea n.sp. caule basi suffruticoso, adscendente, puberulo, virgatim ramoso; foliis ~~canescentibus~~, lanceolatis, sinuato-dentatis, acutis, canescentibus; bracteis ~~minutis~~, ovatis, acuminatis, minutis, ovario multo brevioribus, subpersistentibus, tubo calycis canescentis segmenta et ovarium gracile basi attenuatum subaequantibus, petalis (demum purpureis) calyce multo brevioribus; nuce —.

Margin of rivulets, west of the Brazos, August. — At 2 feet high somewhat canescent; apparently near Gaura Drummondii which like this is the only Gaura, where ovary, tube of calyx and segments are of about the same length; apparently distinguished from it by the very short bracts, which are often somewhat persistent. Petals and anthers are dark red, darker than the petals of G. coccinea. The unripe fruit of our specimens is linear-lanceolate, 4-angled somewhat terete at base. From G. coccinea it is distinguished by the loose inflorescence the shorter bracts and the longer ovary.

Besides these texian gauras I have collected 1835 in Arkansas the following undescribed species.

5. Gaura arkansana n.sp. caule erecto puberulo, virgatim ramoso; foliis lanceolatis, acutis, subdenticulatis, inferioribus in petiolum attenuatis; superioribus subsessilibus; bracteis lanceolatis, parvis, deciduis; tubo calycis canescentis ovarium duplo superante, segmentis et petalis obovatis unguiculatis, bis breviore; nuce canescente, obovata, basi attenuata, apice acuta carinato-4-angulata, nervis intermediis notata.

Wet grassy spots in small valleys near the Hot Springs, Arkansas Aug–Sept. Stem erect about 4 feet high, frequently red, leaves also turning reddish. — Near Gaura biennis in habit, but fruit shorter, more acutely angled and somewhat attenuated at base; lobes of calyx and petals much longer than the tube. The flowers resemble somewhat those of G. Lindheimeri and G. glabra but the calyx is adpresse pubescent, not hirsute, and the ovary much shorter.

62. Eryngium coronatum DC.

63. Cynoviadium pinnatum DC β. pumilum. Distinct from the common erect form

4) which is usually 12 to 20 inches high by its many low diffuse stems, 4–8 inches high; umbells with 4–5 rays only and very few or no involucral leaves; styles apparently a little longer and less divaricate. Common on Prairies Galveston, April and May.

64 Leptocaulis echinatus Nutt — 65. Dicropleura capillacea DC — Seed of Tricuspidaria occidentalis Texas not places

66. Spermacoce glabra Mich. — 67. Mitreola petiolata T&Gr.

68. Polypremum procumbens Lin — 69. Hedyotis Boscii DC.

(N.B. I find among Lindheimer's plants a galium always 4 leaved, leaves lanceolate, only the lowest indistinctly 3 nerved, pellucide-punctate. flower greenish white fruit with uncinate hairs. apparently between G. pilosum and triflorum It can not be G. punctulosum ?

70. Vernonia angustifolia Mich — 71. Liatris elegans Willd. — 72. Liatris mucronata DC

73 (= place of 74 of your collection) Liatris mucronata DC. B. vernalis distinguished from the common form by its early flowering time, by the many headed ligneous root, by the short spikes, by the larger 4–5 flowered heads, lanceolate scarcely ciliate scales, and mostly shorter pappus which is generally equal in length to the nearly ~~smooth~~ glabrous achenium. — Wet sandy prairies near Houston in April and May.

74 = place of 73) Liatris pycnostachya Mich — 75 Eupatorium rotundifolium Lin

76 Eupatorium incarnatum Walt. — 77. Mikania scandens Willd.

78. Aster phyllolepis Torr & Gr. — 79 Erigeron asperum DC.

80 Gutierrezia texana T&Gr. — 81. Solidago nitida T&Gr. — 82. Solidago tenuifolia Pursh

83. Solidago leptocephala T&Gr. we have two forms, one with broader leaves and larger heads with about 5 disc and 11 ray flowers, and another one with narrower leaves and smaller heads of about 3 disc and 10 ray flowers

84. Solidago Bootii Hook. — 85. Solidago tortifolia Ell. — 86. Bigelovia nudata DC — B. virgata T.&Gr.

87. Bradburia hirtella T&Gr. — 88 Heterotheca scabra DC. — 89. Chrysopsis ~~angustifolia~~ graminifolia Nutt — 90. Chrysopsis pilosa Nutt

(From here you will find all the numbers differing one. but you can not be mistaken about the plants I have given.

91. Ambrosia coronopifolia Torr & Gray. — 92. Berlandiera tomentosa Torr & Gr. — B. dealbata T&Gr.

93. Zinnia multiflora Lin.

94. Echinacea angustifolia DC. minor. Our plant is probably the original E. angustifolia DC which was also described from texan specimens; it is somewhat different from the more northern form. — Peduncles long hardly thickened at top; head hemispherical not conic rather somewhat flattened; rays 8–13, 1¼–2 inches long, pale rose coloured. — Grows in clayey soil in pine woods near Houston; fl. in April and May. —

The northern form, E. angustifolia γ. Torr & Gr. E. sanguinea Nutt is a much stouter plant, peduncle incrassate for some distance below the head; head twice as large, hemispherical, at last conical, rays 12–16, 2–2½ inches long, dark red. — Grows in dry prairies and open grassy woods from Missouri and Illinois; fl. in May & June. — Both forms vary much.

95. Rudbeckia alismaefolia Torr & Gr.

96. Helianthus cucumerifolius Torr & Gr. Our specimens have scabrous spotted stems; cordate acuminate, coarsely serrate leaves, long terminal or axillary peduncles, bearing single heads; scales of involucrum narrowly linear-lanceolate, subulate-acuminate, much longer than the disc, reaching to about the middle of the rays; rays 12 to 19. disc dark purple, flowers minutely pubescent at base; chaff 3 toothed, middle tooth elongated, subulate achenia villous-pubescent, mottled, lightly with dark crossings and markings scabrous; pappus 2 lanceolate-linear pubescent scales. — Sandy prairies west of the Brazos July & August.

97 Helianthus vernus n. sp. Caule hispido, ramoso, foliis alternis, longe pedunculatis, infimis cordatis, reliquis basi obtusis omnibus in petiolum abrupte attenuatis, serrato-dentatis; pedunculis terminalibus axillaribusque, elongatis, unifloris; involucri foliolis lanceolatis, acuminatis, discum vix superantibus; paleis tricuspidatis dente medio elongato scabro; fl. radii 16–18; fl. disci atro-purpureis basi villosis, achenii pubenulis; paleis 2 lanceolatis, pubenulis.

Loose sandy soil impregnated with salt, Galveston Island April and May. The first flowering Helianthus! It is very near the last species, also apparently annual, much branched forms bushes 1½ to 2½ feet high; stem somewhat spotted, much more hispid; leaves mostly not cordate much less serrate. scales of involucrum much shorter, more hispidly canescent; disc flowers villous at base, not naked or minutely pubescent; achenia smaller also somewhat mottled, less hairy; palea a little broader, about half the length of the achenia.

98 Helianthus occidentalis Bidd. β. plantagineus Torr & Gr. 99. Helianthus rigidus Desf.

100. Helianthus angustifolius Lin. 101. Coreopsis Drummondii Torr & Gr.

102 Coreopsis tinctoria Nutt 103 Gaillardia picta Don. 104 Gaillardia amblyodon Gray.

105. Gaillardia lanceolata Mich. 106. Palafoxia texana DC.

107. Hymenopappus artemisiaefolius DC 108. Helenium tenuifolium Nutt

109. Leptopoda brachypoda Torr & Gray β. purpurea 110 Marshallia caespitosa Nutt

All our specimens have only one single stem, and are not caespitose. Mr Lindheimer informs us that they grow singly and not in groups together.

111. Egletes texana n. sp. canescens, caule a basi ramoso, diffuso, foliis obtusis, inferioribus in petiolum attenuatis, spathulatis grosse sinuato-dentatis, s. pinnatifidis, s. subintegris, superioribus sessilibus s. cordato-amplexicaulibus, subintegris; radiis involucrum multo superantibus, tubo florum radii et disci exteriorum demum basi indurato, calloso persistente; floribus disci interioribus imperfectis, sterilibus, stylo indiviso.

Quicksand of the downs, Galveston island, April and May. Root apparently annual but we have seen specimens, collected in flower in November with nearly suffruticose very much branched, decumbent stems.

61 Not only the corolla of the ray flowers, but also ~~that~~ of the outer disc flowers is corky at base after flowering; only the ray flowers and some of the outer disc flowers are fertile; the greater part of the disc flowers are sterile ~~though apparently well formed~~ — their style is divided, but mostly shorter than ~~that~~ the corolla; only the style of the innermost is undivided, imperfect. Achenia sulcate, sparsely hairy.

(Have you seen Keerlia Skirrobasis DC.? and may not this be his plant? but Pappus deft in many nearly setaceous short segments)

112 Gnaphalium purpureum Lin var spicatum (G. spicatum Lam!) Inner scales apparently not purple. tomentum on the lower surface of the leaves closely adpressed silvery

113. Cirsium Virginianum Mich. 114 Centaurea Americana Nutt

115. Pyrrhopappus Carolinianus DC.

116 Lobelia glandulosa Walt In wet prairies and woods, in September, a more or less scabrous form. bracts from a broad base lanceolate. sinus of calyx very slightly reflexed. Specimens collected in shady places are less rough; tube of calyx is hispid or nearly glabrous. — another form collected in April in wet prairies is nearly smooth and has linear-lanceolate leaves.

117 Vaccinium arboreum Marsh 118 Asclepias pauperula Mich 4-6 feet high, in bakish swamps near the coast, and in fresh water swamps. Root tuberous.

119. Lyonia maritima Ell

120. Sabbatia campestris Nutt (I have no description at hand but have seen a specimen, so labeled with you, which I think is the same. — I have collected the same plant in Arkansas and Louisiana) fl. April & May and again in August & September. — annual.

121 Sabbatia phyllocalyx Engelm. n. sp. annua caule suberecto, placido, simplici s. brachiato-ramoso, subangulato, foliis ovato-lanceolatis trinervis, inferioribus obtusis in petiolum attenuatis, superioribus sessilibus acutiusculis; calyce 5-partito laciniis foliaceis oblanceolatis corollam 5-partitam superantibus, lobis corollae obovatis obtusis.

Shady margins of streams near Houston, May & June. An annual plant with a weak stem, thin membranaceous leaves and very large leafy lobes of calyx; corolla ~~smaller~~ 2-9 lines in diameter, pale rose colour, white when dry. Principally distinct from the nearly related S. calycosa by the much smaller and constantly 5 parted corolla and by the lower leaves being petioled.

122 Cuntia coronopifolia Willd. "

123. Cuscuta neuropetala Engelm. in Sillim. Journ. 45 p. 75. var. β. minor. This is a smaller form, with a somewhat looser inflorescence, and earlier time of flowering; it grows on drier spots, mostly on Petalostemon multiflorum, but also on Liatris and even on Euphorbia corollata. It approaches to C. hispidula Engelm and it is not improbable that further investigations of the living plants will prove both to be only varieties of one very variable and in Texas widely dispersed species, for which we would suggest the name C. porphyrostigma as all

Nama Lin Calyx 5 partitus, persistens; corolla ~~infundibuliformis~~ hypocrateriformis, limbo rotato (corolla subrotata Spreng syst) 5lobo; stamina 5 inaequalia, basi corollae inserta, inclusa; Antherae cordatae; ovarium superum 2-loculare; styli 2 apice incrassati, stigmata obtusa; capsula bilocularis pleiosperma, dehiscentia loculicida, dissepimento medio placentifero.

130. Nama texensis n. sp. annua, ramosissima caule erecto s. diffuso ramis pilosis, foliis sessilibus oblongo-linearibus acutiusculis strigosis; racemulis 2-4-floris oppositifoliis, tubo corollae (coeruleae) calycis laciniis lineares hispidas aequante; capsula oblonga inclusa, seminibus plurimis minutim tuberculosis.

Sandy Prairies margin of woods near the Brazos. June. — An annual with the habit of Boragineae; abt. 1 one foot high, much branched branches somewhat decumbent; bark of the stem scaling off, of the branches hispid-pubescent; inflorescence terminal but by the developement of the axillary shoots pushed aside, and becoming lateral opposed to the leaf. Apparently near Nama jamaicensis and N. undulata but distinguished from that and all other Namas by the long tube of the corolla ?? [Nama -- corolla subrotata!]

131 Lithospermum linearifolium Gold? annuum strigoso-pilosum canescens, caule erecto, ramoso, foliis lanceolato-linearibus, petiolatis, tubo corollae extus strigosae (albidae) calycem demum multo excedente; nucibus rugosis, strigosis.

In prairies, fertile and sterile soil and cultivated grounds; fl. from April to July, and probably through the summer.

132 Heliotropium curassavicum Lin

133. Heliotropium minutiflorum n. sp. annuum strigoso pilosum, caule erecto ramoso, foliis in petiolum attenuatis, ovato-oblongis, avenii's obtusis, s. acutiusculis; spicis nudis pedunculatis geminis s. ternis; pedicellis calyce strigoso brevioribus; corolla (alba) hispida laciniis lanceolatis, acuminatis, extus strigosis; nucibus laevibus, strigosis.

Banks of the Brazos near San Felipe. June. Resembles somewhat Heliotropium europaeum, but flowers and seeds are not of one fourth the size and the white corolla has acuminate not ovate, obtuse lobes; nuts are strigose but not tuberculated. — Stem much branched 1-2 feet high; leaves about 1 inch long 4 or 5 lines ~~broad~~ wide, as long as the petiole, rarely with one or two veins. — × superioribus sessilibus pinnatifidis.

134. Phacelia ciliata n. sp. annua caule erecto, a basi ramoso, glabro; foliis inferioribus petiolatis, lyrato-pinnatifidis, × segmentis oblongo-linearibus, acutiusculis, ciliatis; racemis terminalibus solitariis, pedunculis calyces aequantibus s. longioribus; pedicellis fructiferis longioribus deflexis; calycis segmentis linearibus obtusis, glabris, ciliatis, corolla brevioribus; lobis corollae rotundatis integris extus pilosis, filamentis pilosis, cum stylo exsertis; capsula pilosa seminibus lacunoso-rugosis.

Loose sandy soil in open pine woods near Houston; fl. March & April.

(Two years ago I have sent you 3 different species of Phacelia, 2 from Texas and one from Arkansas, and I believe one of them must be this.)

135. Solanum texense n. sp. perenne stellato-tomentosum, inerme; caule herbaceo erecto, ramoso, foliis petiolatis, lanceolatis, sinuato-dentatis, s. subintegris floribus racemosis, pedunculis floribus longioribus, fructiferis deflexis; corolla violacea, extus ad nervos loborum medios stellato-pubescente, staminibus aequalibus.

4) Roadsides, prairies, margins of woods, Houston to the Brazos. fl. June to September. Stem 1-1½ foot high, leaves 2-4 inches long, ½ to 1 inch wide, mostly with a few remote blunt teeth, sometimes entire and occasionally deeply sinuate-toothed. Corolla pale purple, berries yellow.

(Besides this I got a few specimens of Solan. mammosum? near S. carolinense but villous to mature, whitish, prickles weak, calyx also sometimes with a few prickles; flowers large, corymbose.

136. Physalis maritima Curtis mss. Probably only one of the many varieties of Ph. pennsylvanica, sandy places on the seashore, covered with grass, Galveston-island, in flower from April to November.

Lindh. has also sent Ph. angulata, Ph. lanceolata (also a form of Ph. pennsyl.) Ph. viscosa var: parvifolia, perennial, flowers long peduncled but leaves as small as in the smallest forms of Ph. obscura, only ½ to 1 inch long.

137. Herpestis rotundifolia Pursh 138. Capraria multifida Mich.

139. Buchnera americana Lin. β parviflora. Whole plant smaller than the northern form, usually 10-15 inches high, flowers only half as large. Apparently no other difference. Dry or wet prairies, from Galveston to the Brazos, April & May, again in July and August. The larger northern form has not been met with in Texas by Mr Lindheimer.

140 Gratiola acuminata Walt. Among specimens of the common form of this plant we find others, collected in August in moist clayey soil on the Brazos, which are distinguished by the diffuse at base decumbent and radicant stems, the shorter, broader, obovate leaves, the longer peduncles, and the broader, much more unequal sepals, which are all lanceolate, acuminate, not linear, obtusish as in the common form. At present we can not specifically distinguish this form.

141. Gerardia spiciflora n. sp. annua (biennis?), caule erecto, inferne foliosa, ramoso superne simplici, subnudo; foliis oppositis oblongo-linearibus basi attenuatis, margine scabro revolutis, inferioribus subspathulatis, obtusis, superioribus acutiusculis; floribus oppositis et ad apicem pedunculi elongati in spicam nudam dispositis; bracteis et pedunculis longitudine calycis; calyce subregulari 5-dentato, dentibus ovatis, obtusiusculis; corolla (purpurea, minore) ciliata; filamentis et antheris rubro-pilosis.

Margin of brakish ponds, Galveston island; fl. May, probably into the Summer. About 10-15 inches high, remarkable by the long naked common peduncles. corolla funnelshaped not very ventricose, 6-9 lines long. From the nearly related G. maritima it is distinguished by the greater size of the plant, but smaller flowers and fruit, the scabrous, revolute margins of the (apparently also succulent) leaves, by the form of the calyx, and by the inflorescence.

[N. B. I have sent the same plant with this name to Bentham through you.]

142 Pentstemon Digitalis Nutt? Caule erecto, puberulo, foliis serratis, glabris, inferioribus lanceolatis acutis, infimis in petiolum longum attenuatis; superioribus basi cordata semiamplexicaulibus ovato-lanceolatis, s. late ovatis, summis paberulis; foliis floralibus, pedunculis calycibusque glanduloso-pubescentibus; sepalis lanceolatis acutis; corolla maxima (purpurea) ventricosa, extus glanduloso-pilosa, intus glabra.

Ravines in clayey soil, near Houston. April to June. — Is it Nuttall's Plant? — The name is appropriate, and I used it before I was aware that Nuttall had done so already. I have sent it under the same name to Bentham.

143. Scutellaria Lindheimerii n sp caule ramoso, erecto s diffuso, piloso folis puberculis ovatis, in petiolum abrupte attenuatis, infimis subcordatis et mediis crenatis, superioribus subsessilibus integris; floribus in axillis foliorum solitariis, breviter petiolatis, calycibus corollisque villosis.

On soil composed of fragments of shells, coast of Galveston island towards the Bay. May. – Many of our specimens are plants of the first year and have all the appearance of an annual! — Stem much branched 10 to 20 inches high. This plant is near S. parvula, but it is well distinguished by being more pilose and pubescent; but especially by the leaves not being sessile, but always attenuated into a more or less distinct petiole, only the very lowest ones are somewhat cordate. We have specimens of a Scutellaria collected in the "Black soil of the Prairies west of the Brazos", flowering in July, which is distinguishable from the Galveston plant only by its much smaller size, and smaller, mostly entire leaves.

144. Scutellaria Drummondii ? puberula, caule erecto ramoso, folis omnibus petiolatis, cordato-triangularibus, crenatis, obtusiusculis; folis floralibus minoribus subintegris, acutis, summis bracteiformibus; floribus axillaribus breviter pedicellatis, corolla pubescente, ~~nucibus tuberculat~~.

In dry and wet places, open woods, under shrubs etc, near Houston; fl. May to August, and again in September and October. Stems 1 to 2 feet high, leaves, even the upper bract-like ones always petioled, all triangular, sometimes 1½ inch long and 1 inch broad, but mostly smaller, an inch long and in specimens from dry sunny places in autumn, only half as large; and approaching to S. parvula (though always distinct by the petioles) Corolla large, 9 or 10 lines long. – Apparently intermediate between those Scutellariae with single axillary, and those with racemose flowers. in some specimens the upper leaves are large, more distant; in others they are smaller and more approximated.

[I have collected the same form also at the Hot Springs Ark. May]

145 Salvia azurea Lam. 146 Hyptis radiata Willd

147. Dracocephalon variegatum Vent. minutely agreeing with Elliotts description, but bracts smaller than calyx, corolla not pubescent and style not hairy. Wet Prairies west of the Brazos, July. Stem 2–5 feet high.

148. Dracocephalon Virginianum Lin. 149. Trichostemma dichotoma Lin

150 Teucrium laevigatum Vahl ? caule erecto, s. adscendente, ramoso, glabro; folis basi cuneatis, in petiolum brevem attenuatis, inciso-3-multipartitis, laciniis oblongis, obtusis integris s. inciso-dentatis, margine non revolutis; floribus in axillis foliorum solitariis oppositis, pedunculis calycem aequantibus; laciniis calycis lineari-lanceolatis, mucronatis, tubo corollae multo longioribus; nucibus dorso 3 costatis.

Prairie, Galveston island, apparently very rare. fl. April & May.

151. Monarda Lindheimeriana n sp. caule glabro, superne sparsim piloso, simplici s apice ramoso; petiolis brevibus basi pilosis; folis basi subcordatis, ovatis acuminatis, grosse serratis, glabris, glandulosis, margine scabris, subtus decoloribus; bracteis acuminatis, integris, glandulosis, capitulum laxum sub-

aequantibus; floribus pedicellatis, calycibus subincurvis, glandulosis. dentibus subulatis diametrum ~~tubi~~ subaequantibus; fauce villosa; corolla glandulosa villosa que.

α. calyce magis incurvo, dentibus ~~calycis~~ diametrum tubi superantibus, villo fauces brevi~~ssimo~~

β. calyce recto, dentibus diametro tubi brevioribus villo conspicuo, dentes subaequante. (Both this and under some other name a

Margin of woods, Prairies, in dry clayey soil, from April to June, again in Sept. & October. — We have seen only a few specimens of var. β. mixed with the other form.

152 Monarda punctata L.

153 Monarda penicillata n. sp. caule erecto, ramoso, puberulo foliis lineari-lanceolatis, remote serratis, in petiolum attenuatis, glabriusculis, glandulosis, summis basi ciliatis, floribus verticillatis; bracteis oblanceolatis ciliatis aristatis supra ad apicem tomentosis, infra decoloribus, verticillum aequantibus s. paulo superantibus; calycibus sessilibus subincurvis 15-striatis, glandulosis, dentibus scabris longe aristatis, ciliatis, ciliis longis ad apicem in penicillum congestis; corolla subnuda, glandulosa, labio superiore bifido.

Prairies, east of the Brazos, in June. — A perennial, similar in habit and in fragrance and taste to M. punctata; flowers of the same size.

Monarda aristata n. sp. caule erecto, puberulo, foliis inferioribus lanceolato-ovatis superioribus lanceolatis s. lineari-lanceolatis, remote serratis, in petiolum attenuatis, subnudis glandulosis, superioribus basi ciliatis, floribus verticillatis; bracteis oblanceolatis, ciliatis aristatis supra tomentosis, infra coloratis, verticillos multo superantibus; calycibus sessilibus, cylindricis, 15-striatis, glandulosis, pubescentibus, dentibus scabris, longe aristatis, ciliatis; corollae labio superiore bifido, piloso.

Moist rocky places in Northwestern Arkansas; begins to flower in June. — collected in 1845 Distinct from the foregoing by the longer bracts, the straighter cylindrical, pubescent, not glandular calyx, the longer aristae of the teeth and the hirsute upper lip of the corolla.

Both are well distinguished from Monarda proper, and form a sub genus (or even a distinct genus?) characterized by the 15 ~~not~~ striae of the calyx and the bifid upper lip of the corolla. In Monarda proper the upper lip is entire, somewhat fornicated, and the calyx has only 13 striae, the interstices on both sides of the upper and longest tooth being marked only with one, all the others with two striae or nerves. This subgenus, having more striae, might be called: Pleisneuron.

~~154 Verbena~~ I have sent you another Labiata, which as most others described by me here as new has probably been named and described before; but as, with my means I can not ascertain that, I have called it from the Locality:

Brazoria n. gen. Calyx bilabiatus, labio superiore 3-lobo, inferiore bilobo lobis latis, obtusis, spinuloso dentatis; corolla exserta, bilabiata, labio superiore erecto 2-lobo, inferiore trilobo; stamina 4 distantia; antherae didymae, interne pilosae; stigma 2-fidum.

Herbae annua texensis, floribus oppositis ~~spiratis~~ racemosis.

Brazoria annua n. sp. caule erecto, ramoso, puberulo, foliis sessilibus, oblongo lanceolatis, denticulatis, glabris; bracteis ovatis acutis; floribus pedicellatis; corolla calycem basi pilosum triplo superante, maculis lacteis, acute triangularibus.

Sandy Prairies on the Brazos with Helianthus mollis, Argemone and others. fl. May & June.

155 Verbena bipinnatifida Nutt? I have no description of Nuttall's plant; but think it is this. — Distinct from V. spuria by the erect stem and short bracts; it has the habit of V. officinalis, but in this the flowers are small and the fructiferous calyx nearly entire both similar to V. urticifolia, but in V. bipinnatifida the corolla is large sometimes nearly as large as in V. stricta and the fructiferous calyx is elongated, and the style persistent on the fruit.

Dry Prairies, Galveston to the Brazos; fl. March to July. The specimens collected in July are nearly leafless, but continue to flower.

154 Verbena macrostachya n. sp. caule erecto hirsuto, foliis ~~infimis~~ incano-hirsutis, subtus reticulato-venosis, infimis obovatis in petiolum alatum attenuatis, dupliciter inciso-dentatis, superioribus sessilibus incisis 3-multifidis, lobis inferioribus inciso-dentatis; spicis terminalibus subsimplicibus, elongatis, floribus imbricatis, demum remotis, bracteis e basi lanceolata subulatis, calycem aequantibus; dentibus calycis ovatis acuminatis.

Roadsides, wastes, etc near Houston. April to July. It resembles V. stricta in the thickness and roughness of the leaves and in the size of the flowers; but the shape of the leaves, the length of the more ~~filiform~~ delicate spikes and the much shorter fruit distinguish it easily.

156 Zapania nodiflora Lam var cuneifolia

157. Ruellia nudiflora n. sp. caule erecto s. adscendente, a basi ramoso pilosiusculo, foliis lanceolato-ovatis, obtusis, sensim in petiolum attenuatis, ad venas pilosis basi et petiolis ciliatis; cymulis 3-floris longe pedunculatis in paniculam aphyllam glanduloso-pubescentem congestis; calycis laciniis subulatis tubum corollae dimidium s. tertium aequantibus, capsula pubescente subbrevioribus.

Dry places in open woods at Sims's bayou near Houston; May to July. Root fasciculated, one or several stems erect or adscending, branching from the base, with short appressed pubescence and longer loose hairs. The ovate obtuse leaves are 1/2 to 2 inches long and 1/4 to 1 1/4 inch broad attenuated into a petiole, mostly about half as long as the leaf. Indirectly distinguished by the leafless panicle.

158. Ruellia ciliosa Pursh

There is another species amongst these plants: pilosa, erecta, subsimplex, foliis lanceolatis, acutis, breviter petiolatis, cymulis subsessilibus, laciniis calycis subulatis. — Distinct from our (St Louis) R. strepens only by the calyx and the more sessile cymes; the lobes of the calyx of our plant are lanceolate. —

159. Justicia humilis Mich flowers never two together — our specimens

160 ~~Dianthera~~ Dicliptera brachiata Spreng. Is no Justicia proper; capsule ~~incompletely~~ ~~2 celled, 2 seeded~~, ~~open by 8 valves~~ parts. — Also in Arkansas

8) Amongst Lindheimer's Plants is another which is also somewhat distinct from Justicia, but belongs perhaps to one of the genera formed from Justicia:

? calyx 5fidus, corolla tubulosa, bilabiata, labio sup. emarginato, inferiore trilobo; staminibus 4; antheris 2-locularibus, superioribus majoribus, inferioribus minoribus (incompletis? raro carentibus Lindheimer); capsula bilocularis dissepimento contrario, valvis adhaerente, seminibus pluribus (10–16), retinaculis suffultis.

Ab Justicia staminibus 4 et capsula polysperma distincta.

Justicia? pinguis n. sp. glabra caule erecto, simplici, foliis lanceolatis, elongatis, margine ciliato-serrulatis, floribus sessilibus in axillis foliorum glomeratis, corolla calycem vix superante (plerumque clausa?); capsula lineari lanceolata acuta. — In swamps near Houston, fl. Sept & Octob. Stem & leaves fleshy.

Single
35
Prof Asa Gray
Cambridge
Mass

St Louis March 11th 1844

My dear Doctor,

I send you here the continuation of my studies on Lindheimer's Plants. I have no doubt that a number of those, described by me as new, will be recognized by you as already described, my literary means are so limited, that I can not do better than describe every plant not found there. You will find, as in the former letters, some further notice, destined for you, and a few of them, such as the description of Gaura, of the Justicia?, may be published in notes, if new. I am anxious to hear from you. By the end of the month I hope to send you the last letter of this kind.

Yours entirely
J. Engelmann

Continuation of Lindheimer's Collection.

161. Utricularia . Wet Prairies, Galveston island. April 1843.
162 Samolus ebracteatus Bonpl. In sandy soil, moistened by brackish water, Galveston island May, 1843
163. Plantago gnaphaloides Nutt, Sandy soil, Galveston island April 1843.
164. Plantago aristata Michx Poor clayey soil west of Houston, April 1842.
165 Iresine celosioides Lin Rich loose soil in shady woods near Watercourses, Houston Septemb. 1842
166. Oplothecа floridana Nutt loose sandy soil in prairies and open woods west of the Brazos, August 1843.
Y. Texana.
167 Eriogonum flavum Fras ? Dry prairies west of the Brazos, July & August 1843.
I doubt whether this is Pursh's plant; but I have no specimens or good description to compare, and must leave it to you
168. Polygonella ericoides n. sp. Prairies, 16 miles west of San Felipe, on the Brazos. fl. in July
B. P. polygamum.
You tell me, the genus is known; if the species be not, I propose the above name.
Polygonella perigonium 5-partitum, stamina 5 exteriora filiformia, 3 interiora staloidea, obcordata cum stylis 3 capitellatis alternantia; nux triangularis perigonii segmentis 3 interioribus augmentatis inclusa; 2 exterioribus minoribus reflexis. ~~plus subtus~~

Herba suffruticosa distincta a Rumice numero laciniarum perigonii et staminorum, stigmatibus capitatis non penicillatis, et toto habitu; a Polygono stylis ad basin liberis, et nucibus solum laciniis perigonii 3 interioribus multo augmentatis tectis.

Polygonella ericoides n. sp. glabra, glauca, caule suffruticoso ramoso, foliis plurimis fasciculatis, oblongo-linearibus obtusis mucronatis; floribus spicatis, spicis paniculatis, bracteis ochreatis abrupte acuminatis. floribus pedicellatis laciniis perigonii fructiferi pendulis interioribus ovatis, subcordatis emarginatis, exterioribus reflexis multo minoribus.

Stems 1 to 1½ foot high, suffruticose many from the same root; leaves with ochreate stipules apparently somewhat fleshy. Much more nearly related with Polygonum than with Rumex, but the fruit resembles this last genus much more than the ~~first~~.

Amongst Lindheimer's Polygona is one nearly related with mite & punctatum; I have called it:

Polygonum texanum, ochreis ciliatis (nudis) perigoniis glandulosis, floribus 5-6-andris 2-gynis, seminibus compressis lucidis.

A large plant 2-3 feet high, with leaves 5-7 inches long 1 inch broad probably of an acrid taste, growing in Swamps near Houston, base of stem decumbent & radicant, much like P. amphibium.

169. Stillingia ~~Gilvatica~~ Lin. Prairies near Houston May 1842
170. Stillingia ligustrina Michx. In thickets near watercourses, Houston, May 1842
male flowers in some specimens longer than long pedicelled, not nearly sessile as Michaux says.
171. Croton Lindheimerii n. sp. Dry Prairies near Houston, and on the Brazos. May to Septemb. 1843
172 Croton glandulosus Lin. Openings in dry woods, Houston May & June 1842
173 Croton Argyranthemum Michx Margin of Woods, Houston April & June 1842
I do not recollect the genera of Klotzsch; ~~and~~ you will therefore correct the names accordingly; Cr. Lindheimerii is congener with Cr. capitatum Mich. I will give a short synopsis

2) of all the N. American Crotons, known to me:

Croton — Croton is masculin

I. Capsula tricocca, trisperma, fl. ♂ cal. 5-partito.

A. fl. ♂ petalis 5; fl. ♀ ad basin spicae masculae a. cal. ♀ aequalis 5-partitus.

1. Stamina 9–12, discus hypogynus 10-dentatus; stigmata 6. — Croton glandulosus Lin. — Illinois, Arkansas, Texas

2. Stamina 15–20, disc. hypogyn. orbiculatus, integer; stigm. 8–12 — Cr. Argyranthemum Mich. — Texas

b. cal. ♀ inaequalis, 6–8 partitus; stamina 12

3. Stigmata 18–24; folia integra. — Croton capitatus Mich. — St Louis, Arkansas

4. Stigmata 12, folia denticulata — Croton Lindheimeri n. sp. — Louisiana & Texas

B. fl. ♂ petalis nullis; fl. ♀ in glomeruli distinctis.

5. Cal. ♀ 5–6 partitus, stam. 12; stigm. 12. — Croto-maritimus Walt. — Carolina, Texas

6. Cal. ♀ ? stam. 7–8 stigm. ? — Croton plattensis n. sp. — foot of the Rocky Mountains

II. Capsula 4 valvis, monosperma; fl. ♂ cal 3-partito, petalis 3, staminibus sub-4; cal. ♀ 4–6 partito stigm. 4.

7 — Croton elliptius Nutt. — Missouri, Arkansas, Texas.

The three new species are:

Croton Lindheimeri annuus, stellato-tomentosus, caule erecto, ramoso, foliis longe petiolatis e basi ovata subcordata lanceolatis, acutis, repando-denticulatis s. subintegris; floribus spicatis, masculis pluribus, breviter pedicellatis, calyce 5-partito, petalis 5, linearibus fimbriatis, staminibus sub-12, antheris ovato-orbiculatis; fl. femineis paucis ad basin spicae masculae glomeratis, calyce sub 8-partito laciniis inaequalibus, minutis subulatis, reliquis spathulatis; ovario disco carnoso dentato insidens, dentibus basi laciniarum calycis majorum adnatis; stylis 3 bis bifidis (stigmatibus 12).

Dry prairies, roadsides, often entirely covering old roads; from Houston to the Brazos. (also western Louisiana & Leavenworth in Hb. Short). fl. May to Sept. — Stem 4–5 feet high. Distinguished from the nearly related Cr. capitatum Mich by the greater size, the shape of the leaves, the smaller number of divisions of the stigma, and the smaller more oval less compressed seeds which in Cr. capitatum are larger, orbicular, flattened. — The lower leaves are 4–5 inches long and 1½ or 2 inches broad at base on petioles 3 inches long; upper ones smaller in proportion.

Croton plattensis n. sp. annuus, foliis petiolatis, ovato-lanceolatis, integris, supra glabris, subtus stellato-pubescentibus; floribus masculis spicatis, pedicellatis, calyce 5 partito segmentis ovatis, acutis; petalis nullis, staminibus 7–8 disco orbiculato insidentibus, fl. fem. ?

I have seen only one specimen of this plant, collected on the upper Platte river by Dr Mersch in June 1843; it may be a diœcious plant or it may developpe the female flowers in distinct glomerules, as is the case with Cr. maritimum, to which it also approaches by the want of petals; but it is an annual plant with a few stamens only. —

Croton Argyranthemum Mich. whole plant, even petals and styles covered with silvery, fimbriate scales, attached by the middle (stellated hairs, membranaceously

connected). Male flowers with 5 spathulate petals, lanate at base. Stylis bifidis divisions ~~more or less~~ divided again or undivided, so that in the whole there are generally 9 or 10 stigmata.

Croton elliptium Ell is probably Cr. capitatum Mich. — Is there any oth. N.A. Croton?

174 Euphorbia bicolor n. sp. annua, caule erecto, villoso, foliis subsessilibus lanceolatis s. linear-lanceolatis, basi obtusis, cuspidatis, pilosis s. villosis, umbellae trifidae ramis bis dichotomis, pilosis; bracteis lanceolatis, basi attenuatis, margine decoloratis, membranaceis, glandulis involucri villosi margine petaloideis suborbiculatis; capsulis dense lanatis, seminibus sparsim rugosis.

β. concolor; bracteis margine membranaceo angustissimo s. subnullo, foliis latioribus.

Prairies near Houston. June to Sept. β. in wet saline prairies near Lynchburg. — A splendid species resembling much E. marginata Pursh, distinguished by the villous pubescence and by the narrow leaves and bracts. — Our specimens of β. have wider leaves, and the bracts are nearly entirely green; but they are young specimens, not fully developped.

175. Tragia urens Lin. ~~Affinis~~ Mercurialis. Hard soil in dry prairies east of the Brazos. July 1843

176. Tragia urtifolia Mich. Prairies and woods near Houston April 1842. Amongst the common form is a specimen very similar, but climbing. Lindheimer thinks it is a variety, but the leaves are narrower, with shorter petioles; flowers not in long spikes as in Tr. urt. but few, 2–4 together; flowers, fruit, fructiferous calyx much smaller. — It may be a different species.

177. Phyllanthus polygonoides Nutt. Grassy banks of rivulets, west of the Brazos. July 1843

178. Jatropha stimulosa Mich. Loose sandy soil, Houston. July 1842

179. Urtica gracilis Raf.? Galveston island in thickets. April 1843.

180. Quercus virens Ait. Moist woods near the mouth of the Brazos and other Rivers. August 1843.

181 Cupressus disticha L. Stagnant water: deep ponds, Houston, June 1843

182 Sagittaria lancifolia Lin? scapo subramoso, bracteis ovatis acutis subpubescentibus, fl. fem. brevius, fl. masc. longius pedunculatis, calyce basi subpubescente, nucibus compressis, rostratis, falcatis; staminibus 20–30. In ponds, in clayey soil, near Houston June, again in September. Larger specimens with broader leaves and larger flowers, with 40–50 stamens from brackish swamps near the coast.

183. Sagittaria stolonifera n. sp. caule stolonifero, radicante; foliis submersis lato-linearibus, rectis, emersis lineari-lanceolatis, 3–5 nerviis, scapo simplici, bracteis ovatis acutis s. obtusiusculis, brevibus; pedunculis subternis, omnibus elongatis; staminibus 12–16, nucibus compressis oblique suborbiculatis breviter mucronatis. *

184. Commelina angustifolia Mich. Open woods, also in cultivated grounds, Houston, May.

* Ponds near Houston, collected in September (second flowering?). I have also a Sagittaria with bulbous roots, linear rigid leaves, collected in well preserved March! — also a new species?

185 Xyris scabra n. sp. foliis linearibus, graminei, longis, scapo superne anceps, angulis serrulato-scaberrimis; capitulis ovatis, bracteis obovatis breviter crenulatis s. emarginatis; sepalis latenibus acutiusculis, apice carinis, fimbriatis

4. capsula obovata obtusa.

Springy places in the Prairies west of the Brazos, July.

186. Xyris angulosa n. sp. foliis linearis-setaceis, scapo multo brevioribus, scapo superne vix compresso, multi-angulato, laevigato; capitulis ovatis, bracteis obovatis, superioribus (interioribus) ciliatis; sepalis lateralibus setaceo-acuminatis, carina laevissime ciliatis; capsula obcordata.

With the foregoing.

N.B. You will find both very distinct species under the same No. (184) probably specimens of both perhaps also of the two following; if they are already described please put the right name there. Xyris appears to open a wide field for investigation! I have on that occasion examined all specimens, which I could lay hands on and will give you below the result. It is difficult to find from the descriptions in the Authors, which is which. Xyris fimbriata is certainly not amongst them.

Xyris minor n. sp. small, stem about 8 inches, compressed, but also striate or slightly multangular; leaves setaceous, short; head globose, bracts obovate slightly & irregularly crenulate; two lateral sepals, subacute, fringed & incised; capsule obovate, obtuse.

with X. angulosa & scabra.

Xyris conifera n. sp. leaves broad, linear, as long as the stem; stem compressed two edged, smooth; head oblong, finally cylindrical; bracts obovate, very entire, two lateral sepals acute, deeply & irregularly fringed & incised; capsule emarginate obovate.

Swamps near the mouth of the Brazos, coll. Septemb. — also Alabama (the Buckley) the largest of my species; leaves broad, long; head sometimes over an inch long.

Xyris

Stem compressed, ancipitous, not otherwise striate or angled.

Edges smooth

two lateral sepals obtusish

1. irregularly fringed & notched, bracts obovate, slightly crenulate, leaves linear setaceous, short.
„Xyris brevifolia" Hale, Louisiana

two lateral sepals acute

2. deeply & irregularly fringed or incised; bracts obovate, very entire, capsule emarginate leaves long & broad
Xyris conifera n. sp. Texas, Alabama

3. very finely ciliate, cuspidate, bracts orbicular, slightly crenulate, leaves broad & long.
„Xyris fimbriata" Hale, Louisiana. (not of Ellis)

Edges scabrous

4. scap[illegible], two lateral sepals finely ciliate, acute, capsule slightly emarginate (?) bracts obovate [illegible]ghtly crenulate, leaves linear, short, grasslike, plant small
„Xyris brevifolia" Curtis N. Carolina

5. very scabrous, crenulate two lateral sepals fimbriate & incised, acutish, capsule obovate, obtuse rather a large plant, leaves grasslike, long
Xyris scabra n. sp. Texas

Stem more or less compressed, manyangled or striate.

Stem more compressed, two edges prominent.

6. lateral sepals acute, very slightly ciliate, capsule emarginate, bracts orbicular, nearly entire, leaves linear grasslike, long; head globose
„Xyris carolinensis" Brown, New York

7. lateral sepals subacute, fringed & incised, capsule obtuse bracts obovate, slightly crenulate, leaves setaceous short; plant small; heads globose
Xyris minor n. sp. Texas.

Stems hardly compressed, manyangled.

8. lateral sepals acuminate subacutate very slightly ciliate bracts obovate inner ones ciliate capsule obcordate, leaves linear, setaceous, shorter than the stem; heads ovate
Xyris angulosa n. sp. Texas

For now you will have to alter the Numbers again and add two more, No. 185 of your coll. is here No. 187

over

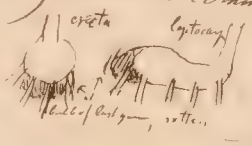
187. Hypoxis erecta Lin. foliis planis, graminei, scapo pauciflorum longioribus, bracteis minutis scariosis; perianthii segmentis oblongis s. ovato-lanceolatis, acutis, exterioribus apice barbatis; capsulis subglobosis, perianthio persistente bis terve longiore cornutis seminibus in loculis singulis biserialibus subsenis.

β. aestivalis. foliis linearibus scapum subaequantibus.

Common in dry clayey soil, Missouri to Texas fl. from March till May. β. sixes, in prairies which had been burnt in spring. fl. in July. — We have given the character of H. erecta again to contradistinguish it from the next species. The principal difference lies in the short capsule with six rows of seeds, which are only half as large as in the next species, though similarly coated with a hard black rough testa. The leaves also are usually narrower, shorter, and the bracts much smaller and scarious.

188. Hypoxis leptocarpa n. sp. foliis planis graminei, scapo paucioribus multo longioribus bracteis omnibus s. superioribus solum herbaceis subulatis elongatis; perianthii segmentis lanceolatis, acutis, exterioribus sparse pilosis; capsulis prismaticis trigonis perianthium persistens subaequantibus, seminibus in loculis singulis uniserialibus subquaternis.

In sandy soil along beds of rivulets near Houston June to August. Flowers only half as large as those of the other species, seeds twice as large. — The farinaceous bulb at the base of the stem is in this species more elongated and (probably on account of its growing frequently on steep banks of brooks) not uncommonly horizontal, so that the stem is ascending, and the remains of the bulb of last year are found on the side (not under) of the new bulb.



189. Moraea? ? Open woods & Prairies from Houston to the Brazos, June & July (also in western Louisiana). — Probably a Moraea. It is distinguished from Nemastylis under which name I have received it from Louisiana by the anthers in which the cells are connected by a broad membrane, by the long style (also with 3 bifid stigmas) and by the smaller inner segments of the corolla. Nemastylis has all segments equal, anthers linear convolute after shedding the pollen, styles short with 6 long segments of stigmas. I have it from Arkansas & Texas.

Both plants without flowers are very similar, but Nemastylis may be distinguished by the membranaceous margin of the long sheath of the leaves and of the bracts; Moraea has not that membranaceous margin of the bracts; and the stem leaves are nearly without sheaths.

In the plant which I take for Nemastylis coelestina there is only a very short tube of the corolla; the scape is few flowered (not 1 flowered) leaves linear lanceolate (not subulate), flower pale blue; in our Moraea bright purple.

190. Habenaria auriculata n. sp. radice tuberosa, tuberibus 2 indivisis; foliis lanceolato-linearibus, elongatis, superioribus setaceis; bracteis germen strictum (non tortum!) aequantibus; perigonii laciniis exterioribus lateralibus basi sursum auriculatis oblique triangularibus; labio laciniis duabus interioribus similis sursum directo, lineari oblongo, obtuso, calcare longissimo sursum curvato.

Moist prairies near Houston April to June. — Very remarkable by the ovary not being twisted; the lip and spur are therefore directed upwards, and the lip hardly different from the two ~~lateral~~ other inner segments of the perianth. The lateral outer segments have a large blunt tooth or auricle on the upper side at the base, so that they appear obliquely triangular. The flowerbud therefore is gibbous upwards at base. Is it perhaps a Platanthera — or justifies this direction of the corolla a ~~specific~~ generic distinction?

n. gen. Orthorchis ?

191 Spiranthes vernalis n. sp. radice fasciculata, caule foliato, foliis lineari-lanceolatis, segmentis perigonialibus oblongo-linearibus, superioribus latioribus, lateralibus angustioribus, longitudine aequalibus, labellum reflexum crenulatum aequantibus v. superantibus.

Moist prairies, Galveston & Houston, April & May. — Stem 1–2 feet high. Leaves conspicuous, 2 or 3 lower ones sometimes 5–6 inches long, 2 lines wide; spike 2–6 inches long, twisted; bracts ovate, acuminate, longer than the germ; flowers of the size of Sp. cernua but well distinguished by the short lip, which is as long and often a little shorter than the other segments of the perigonium.

Spiranthes appears to me rather a difficult genus, and there are probably some undescribed species. I can distinguish, I believe, besides the last, the following; but they must be examined fresh & living.

Spiranthes cernua rad. fasciculata, caule foliato, foliis vaginantibus; perigonii segmentis oblongo-linearibus, labello exserto recurvo, lanceolato-ovato, integerrimo v. paulum crenulato. St Louis, Sept & Octob.

Spiranthes obtusa rad. fasciculata, caule subfoliato, foliis vaginantibus, perigonii segmentis superioribus ovatis obtusis, labello paulo exserto obovato obtuso, crenulato. Arkansas: fol. nullis, caule vaginato; Texas, foliis brevibus vaginantibus; fl. Octob. The Texas plant is larger & has the leaves more developped, but the flowers are identical. — Flowers same size as Sp. cernua.

Spiranthes tortilis tubera radiata unica horizontalia (fol. radical. linearibus — I have not seen them) caule vaginato, bracteis lanceolatis, acuminatis, ovarium subaequantibus, labello obovato, lobato, crenato. Arkansas, rocky hills, Sept & Octob.

Spiranthes gracilis radice fasciculata, foliis infimis ovato-lanceolatis, in petiolum attenuatis, superioribus vaginaeformibus, bracteis ovato lanceolatis, ovarium superantibus, labello oblongo, emarginato, crenato.

Missouri, Arkansas, Texas. August & Sept. — Specimens from Texas collected from March to May in dry prairies, Galveston to Houston, I can not distinguish from the others.

192 Thalia dealbata Fras. Swamps in the Prairies south of Houston, September. The fruit appears to include three embryos, two lateral ones (vertical) (horizontal section) fertile, the central one developed, curved.

193. Sumcus ? near S. marginatus, but distinct by the leaves of the perigonium all acuminate mucronate, nearly equal longer than the obtuse capsule. It is also B-androus. In S. marginatus (Missouri & Texas) the external perigonial leaves are mucronate, much shorter and narrower than the internal ones; these are oval obtuse, scarious on the margin, as long as the capsule. in stagnant brackish water near the coast near Lynchburg and Harrisburg. July. — Leaves mostly obtuse at base, sometimes acute, rarely cordate.

194 Pontederia lancifolia Michaux (Elliott's Pursh!) in rich shady soil near water courses near Houston, July. (Climbing very high; the root forms large tubers or knots which are called — Indian bread in Texas. Stem below the ovalate above naked. Leaves ovate but in other specimens, from the same locality, narrowly lanceolate. —

195. Smilax lanceolata Lin (Elliott! Pursh!) in rich shady soil near water courses, July. (Climbing very high; the root forms large

196 Cooperia Drummondii Dry prairies from Galveston to the Brazos, frequent but mostly solitary; it flowers from June to Octob. or November, mostly in July, only after heavy and continued rains.

197. Aletris aurea Walt. Wet Prairies Houston, April.

198. Phalangium angustum n. sp. foliis linearibus apice longe acuminatis setaceis flaccidis; scapo folia superante; bracteis e basi lanceolata membranea subulatis, pedicellos erecto-patentes subaequantibus, alabastris oblongo-linearibus, petalis linearibus obtusis, staminibus duplo superantibus.

Northwestern Missouri, Arkansas and Texas; in flower about 2 or 3 weeks after the nearly related Ph. esculentum, in Missouri & Arkansas by the middle of June in Texas in April & May. It is a much slenderer plant than the common form, higher, with narrower leaves, shorter narrower bracts, much smaller flowerbuds (alabastra) which are oblong linear, not obovate, and with narrower linear petals. In the vicinity of Fort Gibson I found it in flower by the middle of June when Ph. esculentum had ripe seeds. In the Nikapoo-prairie in South western Missouri it was not yet in flower in the last days of May, a few Ph. esculentum were past flowering by one or two weeks.

199. Allium mutabile Mich. Dry open woods, Houston, April. This is Michaux's & Elliott's plant and it occurs both with umbells and with a bulbous head, with or without flowers. The capsule is in all our specimens one seeded! as Elliott describes it; capsula trisperma of Spreng syst. II. p. 37. is certainly a mistake. — Flowers usually red, but we have also a white variety.

I find in my collection 2 Allia collected by Geyer on the upper Missouri; both are remarkable on account of the six erect scales crowning the ovary (therefore angles of the capsule above bidentate, see Ell. I, 215) and one of them has white long acuminate petals and a reticulated bulb, the other red subacute petals and a tunicated bulb.

200 Ruppia maritima Lin. Salt water ponds, Galveston island May 1843.

201 Cyperus vegetus Lin. Wet prairies, Houston, May & June.

202. Cyperus ovularis Torr. Dry and wet soil, open places near Houston, April to June (perhaps two species?)

203. Cyperus tetragonus Ell. (? style 3 cleft) Dry prairies near Houston (May & June)

204. Rhynchospora hispida Ell. Springy wet places, west of the Brazos, August

205. Heleocharis ? glumes mucronent orbicular, obtuse, scarious on the margin, tubercle a little smaller than the ovary, much smaller than the obovate compressed seed, 6 setae as long as seed. Creeping in the loose sand on Galveston island May.

206. Scirpus ? near lacustris, but distinct by having only two stigmas; glumae smooth, somewhat fimbriate.

207. Spartina glabra Muhlenb. Saline prairies near the coast — July — specimens from Galveston in flower in May. (now ripe, April)

208. Koleria truncata Torr. Open woods, Houston, April to June.

209. Uniola stricta ? shady woods, Houston, June.

210 Panicum hirtellum Lin. shady woods near water courses, Houston, June

211. Andropogon avenaceus Michx. Moist prairies, Houston, September

212 Oxydenia attenuata Nutt. Cultivated soil west of the Brazos, August.

213. Eragrostis prostrata n. sp. culmo (foliaceo?) prostrato, radicante, ramoso, vaginis ore barbatis et foliis scabris, pilosis, fasciculatis; panicula composita, coarctata, ovata, spiculis brevissime pedicellatis, 12–18 floris, glumis exteriore ovata acuminata 3-nervia, piloso-scabra, interiore

8) hyalinam - duplo superante.

Sandy places in the Brazos bottom. fl. July

214. Eragrostis radians n. sp. culmo (annuo ?) prostrato, radiante ramoso, vaginis ore barbatis foliisque pilosis subfasciculatis; panicula composita laxa, ovata, spiculis pedicellatis, 16-22 floris; gluma exteriore acuta trinervia, nervis ciliata et valvissima, interiorem apice hyalina laceram paulo superante.

Sandy places in the Brazos bottom. fl. July. with the other spec.

Eragrostis Both are nearly related with the (at least in the west) common P. reptans Mich. which was also collected in the same locality. It is similar in habit especially with E. radians, but has spikes with 18 to 26 florets, florets only half as large as those of E. rad., inner glume hardly half the size of the outer one. From E. prostrata it is distinguished by the looser panicle, by the many flowered spikes, much smaller florets, by the acutish (not long acuminate) outer glume and by the broader inner glume with two more strongly ciliate nerves.

As you want to print the labels in the list of the whole I must give you the locality etc of the following, which I had not done before, you have only the names: I think it will be best to omit the year, which I had frequently added.

5. Clematis reticulata Walt. Thickets near Houston June.
6. Anemone Caroliniana Walt. Dry prairies near Houston Febr. & March
7. Coronilla Carolinus DC. Fertile shady woods near Water courses, Houston, June.
8. Strept. pyr. Hook. Sandy sterile prairies west of the Brazos. July
9. Cristatella Jamesii Torr. Sandy spots in the prairies west of the Brazos August.
10. Chomella mexicana DC. naked clayey spots in high prairies west of Houston April to August.
11. Polyg. leptocaulis Torr. Sandy sunny banks of rivulets, west of the Brazos, August
12. P. incarnata Lin. Wet prairies, Houston, April
13. Krameria lanceolata Torr. Common in prairies from Houston to the Brazos, April to June.
14. Drosera brevifolia Pursh Wet prairies, Galveston island April.
15. Helianthemum polifolium Torr & Gr. [I believe I have shown you that you must think of another name] Dry prairies, Galveston & Houston. May.
16. Lechea Drummondii Torr. Dry sterile prairies, Galveston island May. with No. 15.
18. Paronychia Drummondii Torr. Sandy prairies east & west of the Brazos July
19. P. setacea Torr. Prairies west of the Brazos - bottom July.
23. Xanthoxylon Caroliniana Lam. In fertile cane brakes along water near Houston. fl. in March. Trees 30' high 8 inches thick, called pepper tree or toothache tree
25. Malvaviscus Drummondii Torr. Wet prairies, ditches, Houston, August
26. Vitis bipinnata Torr. Fertile prairies, Houston June
27. Vitis ludoviciana Mich. In the high grass of the prairies or open woods Galveston island & Houston April.
29. Rhynchosia minima DC. In hard clayey soil, Houston September
30. Rh. menispermoidea DC. In hard clayey soil, Houston September.
33. Tephrosia Virginiana Pers. T. heloserica Torr. Common in dry prairies west of the Brazos. June, July
34. Indigofera Apis sepala Nutt. In clayey soil in the prairies from Houston to the Brazos. June, July
37. Amorpha paniculata Torr. Marsh of brackish water on the coast and of fresh-water rivulets near the Brazos, always in thickets, July.

makes some considerable blunders, in referring C. alba & planiflora to C. major & minor. They are quite distinct. — He does not even mention the species of Hooker's Fl. Bor. C. umbrosa etc. — I was amused on puzzling with Rafinesque's species pag. 190. Living in the region where his 3 species are collected, I ought to be able to recognize them, but it is absolutely impossible. C. paradoxa is probably my Lepidanche, the name is appropriate and a few of the characters, but the others ~~are quite differ~~ are not to be found. —

Choisy must be mistaken in describing his C. microantha, pag 175. amongst those with filiform stigmas, the drawing gives it capitate ones, and the analogy is also for capitate stigmas. If it is so, and if we take away the anomalous C. monogyna we find the interesting result that the Cuscutae with filiform stigmas inhabit Europe, Africa, and the greater part of Asia to the Eastindies & Nepaul. — The second section inhabit all America, all the Islands of the Pacific and extent to its western coast in China and the Eastindies, — A. Braun sent me a letter a few days ago in which he mentions a Cuscuta hassiaca found in Germany with capitate stigmas. — But I suppose it is an American species introduced or naturalized, the same as C. Epilinum is here or as C. corymbosa R. & P. Choisy pag. 180. is in some parts of Europe. I shall soon get specimens.

Probably Lonicera tab 1, fig 1. must be very interesting — account of the calyx and the undivided scales (if correctly represented). — C. arvensis I have got myself and shall examine soon, the scales are also remarkable, if true.

C. prismatica III, 2 is remarkable on account of the absence of scales if true

C. glomerata IV, 1. lobes too acute, stamens too short, drawing good.

C. compacta Jussieu is certainly your plant, and the species figured undoubtedly your alabamica species. The leaf is a poor representative of pinnas globes! the corolla, 6, stiff, the scales as in all the others of this and most other plants very unnatural; the ovary bad. —

C. adpressa must therefore stand for the western species.

C. Gronovii Willd is our common plant, but if the ovary fig. 8 approaches to nature it must represent an ovary of C. oxycarpa! —

39. Dalea aurea Nutt. Dry clayey soil in Prairies and on steep banks of rivulets and in ravines west of the Brazos. July & August

40. Petalost. obovatum Torr. Sterile prairies 16 miles west of San Felipe on the Brazos nearly past flowering in August.

41. Pet. phleoides Torr. β. microphyllum Torr. Sandy prairies west of the Brazos. July

42. Pet. violaceum Mich. β. pubescens In fertile close black soil, prairies west of the Brazos. July

43. Pet. multiflorum Nutt. Dry prairies from Houston to the Brazos. June to Aug.

44. Trifolium reflexum Lin. Wet prairies, Galveston island, May.

47. Mimosa strigillosa Torr & Gr. in clayey soil in prairies, common in old sands near Houston. April to June — through summer

48. M. lutea Lear Moist prairies, especially in clayey soil Houston April to June

49. M. hirta Nutt. Open wood, Houston April to June & July, again in September

53. Oenoth. drummondii Hook Downs of Galveston island April & May, collected also in 1846 & November

54. O. linifolia Nutt. Sterile prairies Galveston island & Houston, April & May

55. O. speciosa Nutt. Prairies, Houston, April.

56. O. rhombipetala Nutt. Prairies, in sandy soil Galveston to the Brazos, June July

57. Ludwigia linifolia Raf. Pinewoods, Houston very sparsely; fl. only for a short time, in May.

59. Jussiaea decurrens DC. On ditches and ponds, Houston, Aug. September.

60. Jussiaea sinuata Nutt. steep banks of rivulets west of the Brazos, Aug.

62. Eryngium coronatum Torr. Margin of bottom woods on the Brazos, Aug.

64. Leptocaulis echinatus DC. Damp prairies Galveston island, May.

65. Dicoplectron capillaceum DC. Wet prairies & margins of ponds, Galveston & Houston May.

66. Spermacoce glabra Mich. in shady thickets on the banks of Chocolate Bayou 40 miles south of Houston. September.

67. Mitreola petiolata Torr & Gr. Swampy thickets, and margins of brooks west of Houston June.

68. Polypremum procumbens Lin. Dry open woods, Houston, June

69. Hedyotis Boscii DC. Damp woods, Houston, May & June

70. Veronica angustifolia Mich. Wet prairies west of the Brazos. July. (The plant grows usually on dry sterile places, in open woods)

71. Listera elegans Willd. Open woods, dry prairies, Houston to the Brazos August, September

72. Lintris micronata DC. Wet prairies, Houston to the Brazos, Aug. Sept.

74. L. pycnostachya Mich. wet prairies, Houston to the Brazos, August.

75. Eupatorium rotundifolium Lin. Open wood & prairies, Houston, August

76. E. incarnatum Walt. In thickets near Houston September. October

77. Mikania scandens Willd. In thickets on the margin of water, Houston Sept. Octob.

78. Aster phyllolepis Torr & Gr. Prairies, Houston, June to October.

79. Erigeron scaposum DC. On the quicksand of the downs, Galveston island April; probably through the summer, collected again October November

80. Gutierrezia texana T. & G. Dry barren soil, Houston, September & October.

81. Solidago nitida Torr & Gr. Prairies on Chocolate bayou, 50 miles south of Houston Sept.

82. Solid. tenuifolia Pursh Wet prairies near Houston October.

10

83 Solidago leptocephala T. & Gr. Wet prairies, Houston, Septemb.
84 Solidago Bootii Hook Prairies, Houston, July to September
85. Sol. tortifolia Ell. Dry prairies Houston, Septemb & October
86 Bigelovia nudata DC. β. virgata Tolr. Prairies on Chocolate bayou 50 miles south of Houston, September
87. Bradburia hirtella Tolr. Prairies with hard clayey soil mixed with the pea-iron-ore, west of the Brazos; July & August.
88 Heterotheca scabra DC. Barren places, clayey soil, Houston, July to Sept. On Galveston island already in April and as late as November.
89 Chrysopsis graminifolia Nutt. Dry open woods Houston, Aug & Sept.
90 Chrysopsis pilosa Nutt. Dry prairies, Houston, Aug. Sept.
91. Ambrosia coronopifolia Tolr. Subsaline prairies near Galveston bay. July
92. Berlandiera tinctoria Tolr., B. decollata Tolr. Sandy Prairies west of the Brazos. June
93 Zinnia multiflora Lin Sandy prairies west of the Brazos.
95. Rudbeckia climacifolia Torr & Gr. Sandy prairies from Houston to the Brazos June
98. Helianthus occidentalis Nidd. β. plantagineus Tolr. Margin of the bottom lands of Oyster creek, 40 miles south of Houston; end of August.
99. Hel. rigidus Desf open woods, fertile prairies, Houston and southward — June to August
100 Hel. angustifolius Lin wet prairies and open moist woods Houston June to October.
101 Coreopsis Drummondii Tolr. Sandy downs of Galveston island, May
102 Cor. tinctoria Nutt. Prairies on Galveston island. May
103. Gaillardia picta Don on soil formed by fragments of shells, Galveston island May
104 G. amblyodon Gray gravelly soil in prairies and open woods on the Millcreek, west of the Brazos. July.
105. G. lanceolata Michx Prairies near the coast, Galveston island, July
106 Palafoxia texana DC. wet prairies, Houston. August
107. Hymenopappus artemisiaefolius DC. Open Oakwoods west of Houston June
108. Helenium tenuifolium Nutt. open woods Houston, Septemb.
109. Leptopoda brachypoda Tolr. β. purpurea. fertile prairies, Houston May
110 Marshallia caespitosa Nutt. fertile Prairies, Houston, in the beginning of April
113 Cirsium Virginianum Michx. Dry prairies & open woods, Houston. March to May
114 Carduus Americana Nutt. moist fertile Prairies, Houston. July
115 Pyrrhopappus Carolinianus DC. Prairies and open woods, Houston. May, June
116 Lobelia glandulosa Walt. wet Prairies & Woods, near Houston. Sept. and
117. Vaccinium arboreum Marsh. Open wood, Houston. April.
118 Asclep. pauperula Michx Swamps and wet thickets near Harrisburg and Houston June to August
119. Lycoris maritima Ell. wet saline prairies, Galveston island. May 1843
122 Cantua coronopifolia Willd. Dry prairies and open woods west of the Brazos, July
132 Heliotropium curassavicum Lin Dry places, wastes, Galveston island
137. Nesopestis cuneifolia Pursh, margins of streams and ponds April & May near Houston
138. Capraria multifida Michx Sandy places on Brazos river, June, July.
145. Salvia azurea Lam. Dry prairies, Houston May.
146 Hyptis radiata Willd open pinewoods, Houston. September.

148. Dracocephalum Virginianum Lin. Dry sandy places, near Houston, Septemb.
149. Trichostemma dichotoma Lin. Open woods near Houston, Septemb.
152. Monarda punctata Lin. Dry prairies, Houston, July
156 Zapania nodiflora Lam., var. cuneifolia. In the quick sand of the downs
158 Ruellia ciliosa Pursh Open woods near Galveston island, April.
159. Justicia humilis Mich^x. In clear running water, Houston, June
160 Dicliptera brachiata Spreng. shady, moist woods near Houston. Aug & Sept.

Recd 22d April

St Louis April 8th

My dear Doctor

10 or 12 days ago I received your letter of March 13th. I finished the examination of the Texas plants and copied it for you, when I received a letter from Texas. Lindheimer has been collecting since January between the Brazos & Colorado, Prunus glandulosa, Daba cuneifolia, several Astragalus &c &c; and will send probably 2500 specimens here in May. This coincides well with your wish to postpone the first publication till we can distribute more at a time. Your proposition to print only labels with Numbers I like well, it is so much quicker done and is cheaper, but then it will be necessary either to lay only one plant in a sheet of paper or to stick the labels on the plant with a little paste, this last I would prefer. — Have something else. Shall we leave the numbers as we have them now, and continue with 215 etc with the spring collection, or shall we wait till that is here, and insert the plants of this next collection on their proper places? In the last case the numbers will have to be altered and I have to wait with the printing of labels and the distributing of those now in my hands, a thing which I should like to begin with and be done with, so that I shall not be troubled with it at a season when my time will be much better employed. — If you consent to this I shall begin as soon as I have your answer, and you might also have the manuscript ~~copies~~ comprising the ~~collection~~ report of the collection of 1843 printed for Silliman's July No — the spring collection 1844 will then come in the October No and both collections will be distributed about August or September. —

I was glad to receive Chorisy's Cucurbitaceae and also two Nos of Journal of Botany, the other things are in New York or on their way hither. —

I was somewhat disappointed in Chorisy's work, the drawings are not so accurate as I had expected them — you can see that the draftsman did not understand the essential points — then the descriptions appear to me not quite characteristic enough; — then amongst the European species at least he

C. americana I have not yet examined, I have 2 or 3 specimens from different Islands now, and am anxious to compare them. I do not see how fig 2 and 3 of C. americana can belong together, to the same species, if drawn correctly. –

Brown has sent me a number of Cuscuta specimens, and a week ago I also got small samples of 14 specimens of Cuscuta in the Herb. of Philadelphia! – I was glad to find some of my species amongst them; for example C. Coryli named by Nuttall – and a few which are new to me, some also named by Nuttall but without botany I have not yet examined them closely but shall do so now, as I am done with Lindheimer's plants. –

C. parviflora Nutt mss. = C. Coryli E.
C. imbricata Nutt mss = C. compacta Jussieu
C. globularis Nutt mss C. pentagona E
C. ? campanulata Nutt mss. } not yet examined.
C. "sanamosa" Nutt mss }

Now I believe I have given you an hour's or two labour to study my long letter and you will be glad to see me put a stop to letter writing for the present. – Answer soon if you have leisure.

Yours truly

George Engelmann

I learn that Endlicher has adopted Hoffsch's Euplomannia and changed yours in Angelandra – is yours not prior to the other?

Double 57

Prof Asa Gray

Cambridge

Mass.

St Louis Oct 5th 1844

My dear Doctor

After a very animated corresponding of last winter we have had nothing to communicate; so it appears. With me it was really so; the early part of summer I was busy in arranging and distributing Engelmanns plants; and since July I am so constantly engaged in the practice of my profession that I have not done any thing in botany. What do you say: I have not observed, not collected — yes not even seen a single specimen of Cuscuta! — The only plants which I collected on a medical visit in the country were a few dried up and incomplete specimens of my new Aralyphe monoroora, which I believe I have mentioned last fall. I was pleased to find it on a very distant place from the first, but similar location: the brink of the limestone precipices on the river bank, with Aster oblongifol & Solidago Drummondi — on the same locality this fall for the first time Allionia (nyctaginea?) — The specimens of Aralyphe were incomplete, the drought for two months on the vine nearly allowing it to live; still it proved always monoarpellary and distinct from the scanty specimens of A. virgata, growing on the same place. — I hope the flood has brought us upper country plants — but have not seen any yet. —

I have had several letters from Torrey; and a fragment of his Cuscuta umbellata (Rocky Mts) distinct from any I have seen. The fragment was very good, but no fruit — The Gentleman of the

trading in Philadelphia have been very liberal, and supplied me with full fragments of C. — amongst the a number of foreign of much interest — but nothing new n. american except Nuttall's C. crassifolia = C. californica Torrey. — incomplete but a very distinct species — from Europe I have had interesting specimens, especially some from Mr Ledebour from Asia — a new species amongst them, — confounded with C. europaea. — I am guilty of gross neglect in not having acknowledge the presents of Mr Hooker. I intended to answer him by giving him a full description of all my new Cacactus but was prevented by too much professional business; will you tell him that? I will do it in early winter. — You advise to send him a Collection of Irish fruits — he is already a subscriber but I will make his collection doubly full, and add many plants, extra

But now for the principal thing. About two weeks ago I received 2 boxes from Lindheimer with well preserved plants from the country between the Colorado and Brazos. One have been on the way since 12 July the other only since 5th August — but both in good order — a number of fine plants, but not a great many for our collection — only about 80 more numbers. — It took me a week stolen leisure hours to select put the up in fresh and more paper, and only now I have arranged them a little. — I did not intend not to write, untill I could notify you of the sending of your specimens; but I must not wait longer; perhaps in another week I will be able to send them. We have now a connection with Adams & Co's Express line — and you can always I hope send small packages safely expeditiously and without too much cost in this way. I shall do it as soon as possible, but the Ohio is now impracticable

perhaps by the Lakes & Buffalo & Boston railroad

and I really dont know whether they will come now expected by — which I should wish the more, as I shall also send you seeds and bulbs, another two species of Cooperia; one send a year ago, it vegetates well here, but did not flower; another larger one send now; I put some in a flower pot, and have already had a flower! It appears a different species: larger flower, larger bulb, broader flat leaves; the other has canaliculate, half terete leaves. — Among the seed is the beautifull or rather singular G. Drummondii.

The labels are printed with numbers only as you suggested, but large and decent enough, to be filled up by the owners of the sets. — I shall send you a set of labels, which you may put to your specimens. —

The new collection contains a number of plants, already in the old ones, e.g. my Monarda? penicillata, Gaillardia pinnatifida and others; — they will be distributed again but not counted nor charged; they are mostly better specimens than the first. — The beauty of this collection is Lisianthus glaucifolius? — and a scarlet Pentstemon with blue leaves. —

I forgot to tell you that we have raised my Helianthus microcephalus, also Brazoria annua (which is also plenty in the new collection) a plant very near Scutellaria, with closed fruit-calyx; — also Helianthus occidentalis and H. vernalis, which name ought to be changed if not yet printed: it might be called H. praecox both are still in flower before my window and I have raised seed enough — both are very distinct in leaves, involucrum, pappus, and seed;

more in my next letter — you see that this is written in great haste — and you must excuse the disorder in it. — Raised also, and in flower now in the second year Malvaviscus Drummondii — fine, but too delicate for our Climate; — lost Gaura Lindheimeri; — raised Phyllanthus Polygonoides and a new? Euphorbia. — — I have received De Candolle vol. 8th. Have you printed any thing? — The interior of Texas is very dangerous ground now; and was so all summer — but I was going with a party of hunters for sport. —

Very cordially yours
J. Engelmann

I have had letters from Payson for both Oregon & California — neither very satisfactory — he will take his collections to England. — Fremont was here, collections not very probably worth much? — he saw Douglas, who took every thing in the Columbia river, last November.

Prof Asa Gray
Cambridge
Mass

Can you tell me any thing about Mr Oakes. I must have offended him but do not know how. He sent my plants 18 months ago, and requested exchange, somewhat later, in 1 12 months ago I sent him a return, and could not think make up a very large package promising more; 9 months ago I sent him at his request (in his first letter) a long and elaborate article on Climate its influence on flowering etc. — But I have never heard any thing from him since his first letter — write soon J. E.

St Louis Dec 6th 1844

Dear Doctor

In due time I received your last letter, which I ought to have answered sooner. — I hope Lindheimer's plants together with seeds for yourself and for Hooker and with bulbs of two species of Cooperia have safely arrived by this time. I have sent them away about 3 weeks ago, and you ought to have received them by Pomeroy & or Adams' Express. — I have received two letters from Lindheimer since, and expect a rich collection every day — some 4 or 5 species of live Cactus; amongst them — he is going further west, and will I hope do more next year. — I believe I have written you that I had a letter from Geyer from Oregon; he will take his plants directly to England (and not pay his debts here in St Louis, I expect!). Fremont has seen Liddon on the Columbia, who had lost every thing he had in the river. Fremont himself writes me that most of his plants were destroyed — It appeared somewhat singular to me, that during a stay of 8 or 10 days here in St Louis he would not allow me to open and dry his mouldering packages. Did he distrust me? He appears to me rather selfish — I speak confidentially — and disinclined to let any body share in his

discoveries, anxious to reap all the honour, as well as undertake all the labour himself. — He objected to take any botanist or geologist along with him, though the expense would hardly have been increased and the discoveries certainly greatly augmented, as he himself can not claim any knowledge of either branch, nor of zoology. — This however is a private remark — I hope when Government does anything to explore Oregon some competent man will be sent along, and, I must confess I should like much to be of the party. — —

I expect a new collection of Lindheimer every day and shall send you specimens immediately. We must then work it out without waiting any longer. I shall go directly at it and send you my notes — but you must then not ~~wil~~ defer it any longer. I owe it to Lindheimer and owe it to the subscribers to distribute the plants then without any further delay.

A Scotch Gardener, Gordon, who had been 1843 with Sir Wm Stuart to the mountains, has returned from England and is on his way to "the mountains of Texas" as he wrote me a short time ago. — A competitor of Lindheimer?

I received the later numbers of Hookers journal, and a letter from him dated Nov 4th where he asks about the collectors and so on. I am ashamed that I have not written to him sooner. —

A few days ago I received a Cusonia collected lately in Abyssinia by Schimper, under the name of C. brevistylis — but it must be C. arabica. Choisy's description is miserable. — One, but a complete, flower of C. californica, collected by Nuttall, was received for Philadelphia, — I have examined a few days ago. A most remarkable species. Nuttall's manuscript name C. aquinata ought to be retained. So it would in name as it does in fact resemble my C. mucronata. —

In the Philadelphia Collection are several from Europe (probably the south), and 1 from the Azores, which belong to new or illy described and known species, but my material is too scanty to make out. —

I am sorry that I can not make a drawing for you from a living plant — will one after a dry specimen do?

Choisy's figure of C. Gronovii is like most of his figures very stiff and unnatural; the ovary, fig 8 is very wrong and quite different; fig 3 is pretty good. But still worse is IV. C. americana. 2 pretty good but 8 again bad, and 3 is no flower, but ripening capsule with the integuments.

Among Lindheimer Plants you find a duplicate specimen of a new Asclepias (Otaria) Lindheimeri not described by Decaisne in DC Prod. — The duplicate please to send to Dr Torrey, as he now takes especial interest in Asclepiadeae. — — Please send it to him.

Is Decaisne's vol IX published?

Of the Buxus I have a few seeds, which I will send — It is abundantly in the second collection, as also another to me new genus of Labiatae.

Very truly yours

Gray

Hooker asks for Geyers Missouri plants.
Could not Wiley & Putnam send half - they sets
to their agents in London for sale ?
and then tell Hooker of it ?

Prof A Gray
Cambridge
near Boston, Mass

Among Lutheri plants, received in a letter is a Polygonacea
3 large external, 3 small internal sepals, woolly at base —
9 stamina — 3 stigmas — New genus? woolly leaves
near Eriogonum & Rumex ! or Oxyria ? also
a dioicous Croton

St Louis Jan 11th 1845

My Dear Doctor

a few days ago I got Lindheimer's last box! I was delighted to find seven live Cactus in it, but some appear to have suffered from moisture; as also the plants, about a thousand specimens — much less than I expected. I have worked very hard to get plants and seeds dry and select your part of both and Hooker's part of the seeds before Mr Kimm started for New York; he left here on the 7th. Cactus he could not take with him, as too bulky, besides I was afraid of the frost. I have also several bulbs; 2? Coopsias? and one white and one reddish yellow Amaryllis? — also a bulb of Asclepias Lindheim. — of all of which and the Cactus I will send you a part as soon as I think it advisable on account of frost. —

I am astonished not too hear from you about the arrival of the plants and seeds, for you and Hooker, send by me early in November in a box per Adams (Sullivan) Express. —

The numbers in both collections have to be altered, but I could not yet arrange them; I will let you know soon, as I have also to write you about my examination of the plants. — But pray go at it now yourself also; we must not wait any longer; for Lindheimer must have money; he has already refused offers, to sell his collection to others, but he will be obliged to do it, if we do not now hasten the distribution of his plants. Can we publish the list in Silliman's Journal Nov?

I will pack the sets as soon as I have examined them, and send them off without waiting for the published list, but we must not lark behind with that! — Lindheimer writes that it shall not be his fault if the nomenclature of Texan plants gets mixed up and entangled; he will send nothing elsewhere but here, but we must not let him lack the necessary means; I have therefore sent him 200 dollars on his Collection; he wrote from the Colorado, Nov. 25th and is now 300 – 400 miles west in the new German settlement of San Saba, "where the plants, I hope, have no latin names", he says. — —

Cactaceae Texanae

1. Mamillaria simplex ?? but respitosa! with small red berries; leaves? at the point with starlike spines, and a fine tomentum.
2. Mamillaria vivipara fruit yellowish green, oval, central (— you flow you say filiform for ficiform — but why ficiform?); leaves? with the groove described by Nuttall, but terminates by radiated spines, with a very strong erect central one; no tomentum among the spines. Nuttall says: barbate, but does not mention spines
3. Echinocactus ? large, globose, 8–10 inches diameter, simple 21 ribs, with radiated (6–8) spines, and a nearly central one, annulated, curved backward 1½–2 inches long; a tomentum at the base of the spines, and also in the centre of the plant; some of the spines covered with Lichen! perhaps like your E. viridescens?
4. Echinocactus ? tenuispinus ? 2 inches diameter, simple ribs oblique, 13–15 — spines radiated, very long, setiform flexible ~~rigid~~ longer towards the top
5. Mulocactus ? respitosa or simple, oval, 1–1½ inch diameter, about 15 straight ribs; spines radiated short and thin, forming pretty little stars, with an oblong or lanceolate centre ✳ — a most beautiful species.
6. Opuntia vulgaris ? few spines; .. N.B. I can not distinguish ferox and vulgaris; some have paler, some darker yellow flowers, some more, some less spines. Our common Mexicani plant has strong spines, but a fruit inermis, and the whole plant is depressed. One with a dry fruit I have not yet seen.
7. Opuntia carpoclados as I call it: evidently near O. fragilis Nutt. 3–5 feet high, with cylindrical, woody and very hard stem, of grey colour. — You get a specimen by the Kimm; branches angular, somewhat cylindrical, not flattened fragile — fruit not at top but on the side of the articulations, articulations short or longer; fruit small red, juicy, not dry, with small spines, and frequently bearing branches. The fruit contains from one to 3 or 4 compressed, somewhat spirally marked seeds; I hope you can propagate the plant from your specimen by planting a few articulations or seeds. — I have seen specimens where the fruit of last year was perfectly dried up and the shoots coming out of it (or with the fleshy external part) grown and bearing fruit themselves. — Among the seeds you find Algarobia glandulosa. The fruit appears to me remarkable, unique nearly; but near Detarium decandrum the seed appears to be enclosed in a testa which is formed by the inner ~~coat~~ epidermis of the legume, and the pulp is originally in the parenchyma of the legume, not in the cavity of the legume as in Gleditschia. Examination of the unripe fruit would show, whether I am right. What do you think of my explanation; I can not think of an other one! There are evidently two coverings of the seed as in almonds! — It appears not to have been noticed before in Algarobia.

I find a few specimens of a new Polygonum, near Sanguinaria which may be called cristatum from the wings of the fruit.

A beautiful polygonaceous plant, of which I have written you; a new genus, near Eriogonum, also with involucrum, but with flowers like Rheum, may be called Eriorheum? Nov. gen.

A diœcious Croton, a perennial Dorstenia, perhaps D. cucumbens.

Iva paspos Hookeriana,

Aster sagittatus, but only a few specimens.

2 new? Helianthus, one near argophyllus, the other near helianthoides? etc.

N.B. As Lindheimer has to exist from his botanical Collections, I think your botanical garden could allow him an appropriation for the seeds and

bulbs are Cortes's which I send in his name. His zeal would be instigated, when he sees that he can earn with his collections so much that he can extend his investigations further in to the interior. I am afraid his last two years work will bring him hardly more the 300 dollars. However I leave that to you. Write soon about the arrival of the two packages; indeed about the first one I expect your letter daily

very truly yours
G Engelmann

Prof Asa Gray
Cambridge
Mass.

I have requested Kimon to deliver the packages to Wiley & Putnams – N York for you. I have written W & P. to send 6–8 sets of Gray's Plants to England they do not appear to sell any!

Additions to my notes to Lindheimer's Collection of 1843

No. 17. Euphorbia gymnanthes. I have compared it again with Engl. not very positive specimens of the multitude of Texas sent 1844 but some of the characters given appear to distinguish it, especially the smaller yellow and brownish seed.

No. 60. Among the Gaures I believe I have mentioned a probably new species with purple flowers, I find it was to be given Drummond's collection not quite perfect, the position of Calyx segments and tube, & of ovary appears to be rather variable in this species. In the [illegible] flowers are larger than usually, I will send a note later.

No. 97 Euphorbia pinetorum. Better name than variabilis, I will send a note later.

125 Cuscuta corymbosa. Caule ad 2 vel 3 pedalem, ramosissimo, floribus fasciculatis in ramis laterales bracteosas dispositis, 5-fidis, tubo corollae subæquante, lobis ovato-lanceolatis, infundibuliformi, separabilibus, ovato-oblongis, carinatis, extrorsum inspiratis, crenulatis, et laciniis linearibus, acutis, s. lanceolatis, acutiusculis, uninervibus erectis, patentibus, superantibus; staminibus limbo brevioribus, squamis ovatis, minutis, tubum subæquantibus; stylis distinctis, ovario longioribus, ovario globoso, corolla persistente, capsula.

α. Gratissima. Floribus majoribus, calyce bracteis plurimis involucrato, tubo corollae infundibuliformi, laciniis corollae segmentis duplo superantibus, staminibus limbo lanceolatis acutis paulo brevioribus, stylis ovario minutum paulo superantibus.

Found into the P. cephalanthum were yellows: some in the bowl surrounded the calyx like an involucrum equal in size but smaller than the ~~[illegible]~~ capsule. – Sepals somewhat incurved or irregularly crenulate. – Carina of the corolla narrow, the lobes of the corolla much less distinct in the second variety, the lobes are widened and have especially in one ✓ are overlap or is doubly. Van, I have thinner leaves of paler colour, and involucrate bracts lobes of corolla α. β. Dr. Gray's seed of the Drops on Euphorbia, Lindheimer's Amphora, Euphorbia [illegible] Cuscuta, coll. June 1843. β. On the cotton lands of the Colorado on Sea willow, Amphora tri-fida etc, coll. August 1844 No. 270 of our Collect.

133. Heliotropium multiflorum. I had it cultivated last summer and observed it diversify it formed a large bush; leaves not without veins, and with simply granulate venation corolla tube intus et extus, intricate villo albo, laciniis linear-lanceolatis acutis, tubo intra faucem pilis clauso; antheris infra medium tubi sessilibus.

177. Phyllanthus polygonoides. ~~Polygamous~~! some plants diœcious, entirely male or female the monœcious, i.e. some male plants have a few female flowers. I have cultivated it, it is perennial though flowering the first year, the early plants were all diœcious.

Lindheimer's Collection of 1844 has been made between the Brazos near San Felipe and the Colorado river, in the neighborhood of Cat spring, in the Millerreck and the Colorado, and along its cotton lands. The prairies are partly of a light and even sterile sandy soil, partly in the lower part of a stiff clayey soil, the bottomlands are formed of a stiff black soil. Near the Colorado River Rocks of a secondary sandstone (probably a cretaceous formation) appear, on which several species of cactus are found. In the prairies ant hills are not uncommon, and on old and deserted ones a rich harvest of peculiar plants may be made.

These few notes are all I can gather for the present from Lindheimer's letters and labels, but I will induce him to make fuller observations of this kind as of much interest for botanical geography. — For a few more notes see Algarobia glandulosa below.

List of plants contained again in Lindheimer's Collection of 1844 and already distributed amongst the plants of 1843.

7. G. Cocculus Carolinus DC. fruiting specimens, collected on the Colorado river — October. The female plants have apparently more frequently hastately 3-lobed leaves than the male plants.
8. Streptanthus hyacinthoides Hook. Prairies between Brazos & Colorado rivers, April and May. — Flowers nodding, siliques erect; our specimens mostly simple, with linear leaves; some larger ones are branching with linear-lanceolate leaves.
11. Polygala lectorcaulis Torr & Gr. along rivulets, west of the Brazos, in May.
18. Paronychia drummondii Torr. & Gr. Sandy prairies west of the Brazos, in patches together May. — The specimens differ from those in collection of 1843 by being young plants, with good leaves, just beginning to flower.
24. Sida Lindheimeria Dry prairies west of the Brazos, June to August. Corolla yellow, 12 to 16 lines in diameter. I have seen forms of Sida Elliottii Torr., which somewhat resemble our plant, as the peduncules are sometimes elongated, though they never reach the length of the leaf; the flowers are of the same size, but the leaves are narrower, smooth above, the carpells only about 9 in number, nearly orbicular and only slightly bimucronate.
29. Rhynchosia minima DC naked clayey soil between the Brazos & Colorado. September.
39. Dalea aurea Nutt Dry prairies west of the Brazos in May & June
40. Petalostemon obovatum Torr & Gr. Perennial. Dry prairies west of San Felipe in July.
49. Acacia hirta Nutt. ripe legumes.
51. Cassia Tournesiana W. & A. Margin of the Brazos — bottom-woods and sparsely in the low prairies west west, undoubtedly indigenous. fl. in March.
55. Oenothera speciosa Nutt Prairies west of San Felipe in heavy soil; fl. in March & April.
60. Gaura sinuata Nutt. roadsides and naked declivities west of the Brazos, April & May.
80 Gutierrezia texana Torr & Gr. Dry prairies between the Brazos & Colorado. Sept & Octob.
83. Solidago leptocephala Torr & Gr. Wet places in the Prairies west of the Brazos Sept.
94. Echinacea angustifolia DC in clayey prairies west of San Felipe, April & May
96. Helianthus cucumerifolius Torr & Gr. Sandy soil west of the Brazos, Aug & Septbr. We have had occasion to observe this and the nearly related H. praecox, N.97., and find them very distinct. Besides the characters enumerated before we find the leaves of H. cucumerifolius always cordate at base and ~~doubly~~ coarsely serrate, of a deep green colour, the involucral scales elongated with subulate tips, at first erect and not covering the disc before opening of the flowers, afterwards, at least partly reflexed; corolla of disc flowers with a very short tube and long and conide neck, disc especially after flowering hemispherical. — The leaves of H. praecox are mostly abruptly attenuate into the petiole, more or less, sometimes indistinctly — in other specimens deeper toothed cut never serrate, of a pale, somewhat cinereous hue; involucral scales lanceolate acuminate adpressed covering the disc before flowering; corolla of disc flowers with a long thin tube and short neck; therefore the disc much smaller than in the other species, and after flowering nearly flat; Achenia considerably smaller. — It flowered in our northern climate together with the its relative from June to October, in its native place (Galveston island) Mr Lindheimer found it in flower in April; it is probably a biennial plant here, germinating in the latter part of the summer, and coming to perfection early in the following spring.

103. Gaillardia amblygodon Gay in light sandy soil west of the Brazos, May to July. Rays bright red, commonly purple at base.
107. Chrysocoma artemisiaeflius DC sandy soil principally in oak woods near the Millcreek, 16 miles west of San Felipe. In flower from March to September. — Lowest leaves entire (in shady places and in better specimens) or lyrate, or usually pinnatifid with entire or even with incisely toothed lobes.
110. Marshallia caespitosa Nutt growing sparsely on dry prairies near the Millcreek April. — Stems 12 to 15 inches high; lowest leaves spathulate, obtuse, 3-nerved; ~~outer~~ scales of pappus large, broadly ovate acuminate; but otherwise not differing from the common form as described by Torrey & Gray
137. Aspectis cuneifolia Pursh Margin of rivulets and ponds, west of San Felipe April to July.
138. Buchnera americana L. β. parviflora Open prairies west of the Brazos, May
145 Salvia azurea Lam. Prairies west of the Brazos, May
153 Monarda ? penicillata covers large ~~spots~~ patches of dry prairie west of the Brazos, May to August. "It appears to take in the inland regions of Texas the same place as the somewhat similar M. punctata in the lower literal districts; its pungent taste is similar, to this latter one, but not so strong". Lindh. —
161. Utricularia vulgaris Lin Wet meadows near San Felipe April & May.
169. Stillingia silvatica L. Prairies west of the Brazos, May.
174 Euphorbia hirsuta
175. Tragia urens L. on the abrupt banks of rivulets near the Millcreek May to July, not stinging!! Lindh.
184. Commelina angustifolia Mich Open grounds, cultivated fields May to July.
189. Mornea in wet prairies sparsely, but rather common between the Brazos & Colorado April to August.
198. Phalangium angustum probably only a variety of Ph. esculentum. Dry prairies west of the Brazos April.

Enumeration of Mr Lindheimer's Collection of 1844.

215. Brasenia peltata Pursh in clear rivulets in the prairies between the Brazos & Colorado, July.
216. Draba cuneifolia Nutt dry grassy places near Cat-spring, west of the Brazos, in March. — We find amongst our specimens some with nearly ovate others with entirely ~~oblong~~ oblong silicles. This would indicate that Draba micrantha Nutt which differs from D. Caroliniana well chiefly in the pubescence of the fruit, is only a variety of this latter one
217. Vesicaria auriculata n. sp. annua caulibus plurimis decumbentibus canescenti-hirsutis, foliis sparsim pilosis, inferioribus lyrato-pinnatifidis s. sinuato-dentatis, basi attenuatis, superioribus ~~sinuato~~ ovato-lanceolatis basi cordato-auriculata sessilibus s. semiamplexicaulibus, subdentatis s. integris; petalis ovato-spathulatis sepala pilosa colorata sub duplo superantibus; filamentis e basi latissima abrupte subulatis, antheris linearibus ovarii loculis 3-4 ovulatis; stylo cum stigmate globoso silicula vix stipitata globosis glabris breviore, seminibus sub 6. marginatis

9. Dry prairies near San Felipe on the Brazos. Febr. & March.
It is very possible that this may be one of the already described species, but it appears to me to differ from all as they are described in Torr. & Gr. flora. I could compare it only with V. grandiflora. This has a stellate pubescence; greenish anes, sepals, obcordate petals, sagittate anthers; V. repanda has subulate filaments; V. angustifolia has a stellate pubescence and leaves attenuated at base; V. Mutchlerii has leaves narrowed at base, and a different silicle; V. gracilis has subulate filaments, leaves narrowed at base, seeds not marginated and V. Shortii has very short styles.

From the examination of 2 specimens of V. grandiflora collected also west of the Brazos, I am enabled to add the following characters: sepals greenish, stellately canescent like the whole plant; anthers sagittate with spreading lobes; cauline leaves sessile, cordate and somewhat dilated at base.

218. Nasturtium tenacetifolium Hook & Arn. Sandy open places in the Millercreek bottom. Febr. & March. — Siliques incurved in some specimens nearly erect in others patulous. In specimens collected in a sterile prairie we find the leaves less divided.

219. Sisymbrium canescens Nutt var. α. Sterile sandy places in prairies west of the Brazos, a very canescent form. Prairies west of the Brazos, April & May.

220. Draba alba Nutt (D. Boyrichii Torr & Gr.) Flower leaves frequently obovate spathulate.

221. Hypericum maculatum Walt. Open woods and margin of woods from Galveston to the Colorado. May.

222. Paronychia dichotoma Nutt. On sandstone rocks near Industry. September & October.

223. Drosera filiformis var. Prairies west of the Brazos. March. Petals twice the length of the calyx, emarginate.

224. Viola triloba L. β. mollis T. & Gr. Along water courses west of the Brazos. April. Also near Houston.

225. Desmodium Pauciflorum L. β. discolor Torr & Gr. Thickets along the banks of Millercreek, west of the Brazos. March.

226. Sapindus marginatus W. Fertile woods near streams, west of the Brazos, fruit ripe in August. Popularly called "wild China tree"; it grows about one foot in diameter.

227. Rhamnus caroliniana Walt. Small trees forming thickets on wet places in the Prairie west of San Felipe; fl. in May. — Var β. parvifolia leaves only 2 to 3 inches long with 7 to 9 pairs of lateral veins; pubescent on the sides of leaves and flowers crowded. With the other.

228. Rhamnus lanceolatus Pursh in thickets along the Millercreek; fl. in March.

229. Tephrosia onobrychoides Nutt. San Bernardo's Prairie, west of San Felipe, in May. — Stem assurgent one to two feet high; pubescence rusty, short appressed; calyx teeth short, hispid not villous, as in the variety sent from Houston, No. 32.

230. Astragalus carpocarpus Ker. Prairies west of San Felipe, April.

231. Lupinus subcarnosus Hook. Prairies west of the Brazos, April. — Branching from the base, from 5 to 15 inches high; flowers smaller, paler, inflorescence more silky or lanuginous than in the nearly related L. texensis Hook, of which we find a few specimens mixed with those of L. subcarnosus.

232. Cassia chamaecrista L. β cinerea Torr & Gr. Sandy places in the woods along the Colorado river. Dry. Perhaps a distinct species, characterized not only by the characters noted by Torry & Gray flor. I, p. 396 but also by the stipitate gland on the petiole below the lowest pair of leaflets, the setaceous glands between the 4 or 6 lower pairs (wanting in C. chamaecrista) and by the indistinct (not very plain, as in C. Ch.) veins of the acute (not obtuse) [illegible]

5. leaflets. The five alternate anthers are shorter.

233. Dalea Parryi glandulosa T. & Gr. Sparsely or forming thickets in low prairies on the Colorado, fr. end of August. — This shrub or small tree, 10 feet high, stem sometimes 6 to 8 inches thick, called in Texas "Musket-tree" is first found as a ~~small~~ low shrub in the San Bernardo prairie west of San Felipe, and becomes larger and more frequent westwardly. It characterizes a new vegetation; in the musket-thickets on the Colorado a small Echinocactus (E. setispinus) is common, and on their borders is found the singular Opuntia spinosissima (No. 244), and on naked places in the neighborhood, especially on deserted anthills a large Echinocactus (E. gyracanthus) often a foot in diameter strikes the traveler with the impression of a tropical vegetation. F. Lindheimer.

The leaflets in our specimens of D. glandulosa are partly linear, 1 line wide, often oblong, 1½ to 2 lines wide, but also elliptical, obtuse, half as wide as long; sometimes all these forms on the same specimen. This plant is very remarkable on account of the Dryadeous structure of the fruit; the inner chartaceous or nearly bony part of the pericarp (or legume) separates from the pulpy parenchyma and encloses each seed separately, forming as many nuclei as there are seeds. This structure appears to occur amongst the Leguminosae only once more in Detarium Juss. from Africa, which however is one-seeded, and where the pericarp is said to be entirely fleshy.

234. Schrankia angustata Torr. & Gr. Sandy prairies between the Brazos & Colorado, May to Aug.

235. Darlingtonia brachyloba DC. γ. glandulosa T. & Gr. Wet prairies west of the Brazos, fr. in July. — We have also seen the slender variety α. illinoiensis from the seacoast of Texas.

236. Prunus glandulosa Hook. Low shrubs on sandy hills in the Prairies west of the Brazos, fl. in Febr. — Fruit yellowish red as large as a middlesized cherry." Lindh. Therefore probably a Prunus. But on one of our specimens in a half-grown fruit entirely juiceless and still covered with the tomentum of the ovary.

237. Prunus gracilis n. sp. Ramis subinermibus; foliis oblongo-lanceolatis, infra supraque acutis, grosse et irregulariter serratis (serraturis plerumque patentibus) supra glabriusculis, subtus cum petiolis brevibus eglandulosis tomento-pubescentibus; stipulis setaceis, glandulosis, petiolos aequantibus; umbellulis 2-3 floris, pedicellis calycibusque pubescentibus; calycis lacinias ovatis, obtusiusculis, petalis orbiculatis, ovario glabro.

In open post oak woods (Quercus obtusiloba) west of the Brazos in small groups, fl. in March. — It is Prunus Chicasa, β. normalis of Torr. & Gr. but I take it to be a distinct species, characterized by the small (about 1/4 inch long), very pubescent leaves with mostly spreading serratures, the very short (1 to 1½ lines long) and not glandular petioles; the small flowers and pubescent (and not glandularly serrate-ciliate) lobes of the calyx. We find no notice of the fruit in Mr Lindheimer's labels, where it is called "Post oak-plum". On our specimens are a few fruits of the size of the fruit of Cerasus serotina, perhaps not full grown, though of a blackish colour. — The species appears intermediate between Prunus Chicasa and P. glandulosa; it is as low a shrub as this one with nearly as small leaves, but it is a plant with much slenderer branches and with elegantly shaped leaves.

238. Oenothera serrulata Nutt. δ. spinulosa Torr. & Gr. nearly smooth with large flowers, petals often 1 inch and even more in length; stems many from the same root, mostly simple or branching at base. — Sandy dry or moist prairies west of the Brazos, May & June.

239. Gaura exaltata n. sp. caule erecto, elato, paniculato-ramosissimo, adpresse pubescente; foliis lanceolatis s. lineari-lanceolatis, supra infraque angustatis,

6. sparsim repando-denticulatis adpresse pubescentibus, floribus in speciis lapis ramosis sessilibus, ductis bracteis decidiis, calycis segmentis tectum pierque superantibus omnino carescente multo longioribus; petalis spathulatis longe unguiculatis, ungue et staminibus brevioribus; nuce sessili, ovata, subacuta, 4 carinata, nervis inconspicuis intermediis notata.

Prairies at the margin of woods between the Brazos & Colorado, also west of Austin. fl. August & September. — 6 to 9 feet high, often exclusively covering large spaces of ground. Near Gaura biennis but taller, more branching, leaves narrower, flowers much smaller, petals spathulate and fruit shorter and thicker.

240 Gaura Drummondii Torr & Gr. Naked and rough sides in prairies, ravines, or steep banks of rivulets, west of the Brazos; May. — Stem and leaves canescently hairy. leaves in our specimens mostly undulate and sinuate-dentate; calyx-tube as long as the ovary, segments mostly much longer, petals deep red in the dry specimen. The very peculiar shape of the fruit is well described by Torrey & Gray - Flora.

241. Gaura parviflora Dougl. On deserted anthills in the sandy prairies between Brazos & Colorado. July & August. — The ovaries as well as the fruits in all our specimens are not globous, but canescently pubescent, and the fruits acutish.

243 Jussiaea occidentalis Nutt along margins of rivulets, where they are not shaded - between the Brazos & Colorado. July, — Petals obcordate.

242 Stenosiphon virgatus Spach, high prairies on the Colorado, often on rocky soil, sparsely.

244. Opuntia frutescens n. sp. Caule erecto ramoso, teretiligneo, cinereo, dupliciter aculeato, ramis junioribus articulatis, fragilibus, subcylindricis angulatis, brevioribus, viridibus, floribus in aculeorum fascicuis-lateraliter s. sub apicem gerentibus; fructibus obovatis, carnosis (scarlatinis) fasciculis aculeorum piliformium obsitis, seminibus paucis (albis) compressis, reniformibus includendis persistentibus, proliferis.

This remarkable Cactus was collected as stated above near the Mustid-thicket, (No 233) on the Colorado, in August; it acquires a height of from 3 to 5 feet, has a branching ligneous stem, covered with a light gray bark and sometimes even with lichens. It bears bunches of small hairlike spines, with one larger one (4-6 lines long) which disappear on the oldest stems. The wood is close-grained and very hard. The younger branches are green and angular and bear the best short (about 1 inch long) articulations, which very easily break off; these bear when young as the other Opuntiae short terete subulate leaves, and in the axills of these one larger spine and above this a bunch of small ones. — Our specimens are not in flower but are covered with the obovate umbilicate scarlet fruits about 8 lines long, which are fleshy but not juicy and contain very few (2 to 5) white compressed seeds. — The most remarkable circumstance is that the fruits frequently bear one or more (even 4 or 5) new branches at the upper bunches of spines; they either fall off with these branches or become persistent, dry up and finally form part of the stem.

This species is apparently near Opuntia fragilis Haw. but is distinguished by the high ligneous stem, the mostly axillary position of the flowers and the fleshy, prolifeous fruit.

Besides this Mr Lindheimer has send us 7 other Cactaceae, most of them in living specimens.

7) Opuntia without fruit or flower, probably O. vulgaris Mill several feet high with large obovate joints and few spines; from the Brazos.

Opuntia, perhaps O. missouriensis DC low, with smaller orbicular joints, with numerous large straight brown spines and bunches of also brown prickles, which are longer than in the other species; flowers yellow, in May. On sterile prairies, 12 miles west of Houston.

Mammillaria similis n. sp. caespitosa, axillis glabris, tuberculis ovatis apice spiniferis, spinis aequalibus rectis, radiantibus, albidis, junioribus sub lente puberulis, basi tomento circumdatis; floribus sparsis, carpis glabris scarlatinis.

On Sandstone rocks near Industry, west of the Brazos. — Evidently very near M. simplex, but caespitose, forming tufts of 6 to 12 inches diameter, tubercles with about 12 white (not red) radiating spines, flowers not seen, berries scarlet, of the size of a large pea, rather dry, with numerous black subglobose scrobiculate seeds with an elongated white hilum.

Mammillaria sulcata n. sp. caespitosa, tuberculis ovatis senioribus sulco pilifero supernotatis, apice spiniferis, spinis rectis radiantibus, cinereis; in plantis senioribus spina centrali subrecurva aucta; floribus centralibus fasciculatis; fructibus oblongis, floris rudimentis coronatis, virescentibus, polyspermis.

Like the foregoing; ~~Cuba~~ and similar to it but a much larger plant. I would take it without hesitation for M. virginana Haw if that was not described as having bearded tubercules. Ours are very spiny; in the young specimens we find 8 to 10 radiating horizontal about equal spines; in the older ones one becomes central, much stouter often 8 lines long, erect or rather curved somewhat backward. Flowers not seen. Fruits sessile in a cluster in the centre of the plant, surrounded by the innermost tubercles, enclosed at base by a tomentum, about 10 to 12 lines long, oblong, juicy, greenish; full of black smooth shining seeds, which are compressed on one side toward the hilum.

Echinocactus setispinus n. sp. subglobosus, apice retusus, costis plerumque 13 obliquis, aculeis (15-18) fasciculatis, tenuibus, flexuosis, flavicantibus, fasciculis 10-12 peripheriis brevioribus radiantibus, 3 superioribus elongatis, 1-3 centralibus longissimis erectis; floribus minutis, sepalis ~~[illegible]~~ acutis, in pariis longissimis ortis, basi tomento cinctis; sepalis in tubum concretis, pariibus liberis scariosis, late ovatis, acuminatis, margine fimbriatis; fructibus? seminibus ovatis, nigris opacis, minutim tuberculatis.

Common among the Mustid trees on the Colorado River. — Near Echinocactus tenuispinus Link & Otto, from Brasilia, but distinguished by the somewhat oblique and acute not straight obtuse ribs, which show at their bases a transition to the tubercular structure of the Mammillariae; also by the very small flowers. Our specimens are about 2 inches in diameter and 1½ inch high have 13 (one of them 15) pretty sharp ribs, separated by deep grooves. The spines near the base are shorter, mostly broken off, toward the top they are longer, more flexible, those in the centre of the bunches are longest (about 15 lines long). We find a few shrivelled up flowers and one incomplete fruit on our specimens. They do not originate from the clusters of spines, but from an impression in the rib above them. The flowers are about 5 lines long, at base surrounded by a tomentum; the seeds are punctiulate black, not shining.

8. Echinocactus ? gyracanthus n. sp. [do you know a better name to express the transversely striate or annulated spines ?] hemisphaerico-depressus, vertice tomentoso, costis 21 verticalibus acutis, subundulatis; aculeis e cicatrice ovato-lanceolata tomentosa ortis, fasciculatis, compressis, transversim striatis, e cinereo rubellis, 6-7 exterioribus inaequalibus, subrectis, centralibus multo longioribus recurvis, flavibus ?

On deserted anthills near the Colorado river, often a foot in diameter. Our specimens are 8 or 9 inches in diameter and 4 or 5 inches high, none of them in flower or fruit, nor find we any notice of flower or fruit in Mr Lindheimer's letters. — Evidently near E. viridescens Nutt. from California with which it has the transversely striate or annulate spines in common; also near E. corrigenus DC. or E. platyacanthus Link & Otto, who say nothing however of the annulated spines, nor do they indicate it in their figure. The shape of our species however is different from any other, we

Small
Cactus
Texas ? species ?
Gray

find described; it is only half as high as broad and resembles in that respect Melocactus placentiformis Lehm. — If really all other Echinocacti have smooth spines, our species and Nuttall's E. viridescens are easily distinguished from them by their annulated ones. From this last named species ours may be known by its depressed shape (E. viridescens being higher than broad according to Torrey & Gray flora) and by its recurved spines, of which the shorter ones measure 10 to 15 lines and the longer ones as much as two inches. Some of the older spines we find covered with lichens.

Cereus ? caespitosus n. sp. caespitosus, ovato-globosus, apice depresso-umbilicatus, costis sub-15 e tuberculis concretis ortis, rectis; aculeis (sub-24) brevibus, flavescentibus, e cicatrice lanceolata ~~ortis~~ radiatis, recurvulis, laterali longioribus.

Gravelly soil near Cat's spring, west of San Felipe. A singular plant.

7 Cereus? caespitosus contin:
A. singular plant, probably a Cereus of reduced dimensions and near C. reductus DC, or an Echinocactus of the smallest size and of a caespitose growth? – The heads are from one to two inches in diameter and a little higher than broad; among our specimens are some growing out of the side of another one and others growing out of its top, opuntia-like! – We find from 12 to 17 but mostly 15 ribs evidently formed by confluent tubercles, each of which bears on top a bunch of about 20 to 26 spines, from 1 to 2 lines long radiating from an oblong or lanceolate spot longest on the sides, and curved backwards or rather into the grooves. Flowers not seen, but apparently originating between two clusters of spines and at base surrounded by long wool.

Besides these 8 species we find in the Lindheimer letters mention made of a 9th species, „a small curious sixangled Cactus on the siliceous hills near La Grange" but we do not find any specimens in the collection.

---

my dear Dorton you will get these cactus alive as soon as the weather will permit it. I hope you can compare them with living specimens of mammillaria simplex, viviparia & Opuntia pycnacantha to decide of their identity or difference. – Vesicaria auriculata I forgot to send you. I will send it in a pamphlet, as also some other plants, which though not in numbers to be distributed, we might to publish, – so a new Phoradendron also. –

I have gotten your letter of ~~Dec.~~ Jan 4th and you will have mine of Jan 11th and also the plants sent by Kimm, and the seeds. You are right in what you say of L's collecting but I hope he will do better in the perfectly new regions where he now is. – I have also tubers of Alstroemeria aurantiaca; as also bulbs of different Cooperia and Amaryllis (about 4 species in all). – Can we publish in the April No of Silliman Journal? It would be desirable. In a few weeks I will send you all my manuscript, and begin

the distribution of the plants.

In my letter you find first a few additions or alterations for the plants from No. 1 to 214. then the list of plants of 1844 begins, at first those that are already in the first collection, but not in sufficient numbers or in good specimens, then comes the names together with notes &c. of the new numbers from 215 on. The Cactus you will have to compare living with my description; of the two Opuntias I can send nothing, nor is it worth while; I have only put them there to have all the Cactus of Texas collected by Lindheimer. Glandulosus collected none! you mention not one in flora. ——

I think you best publish in the same way as Coll. of 1843, then Coll. of 1844 &c, plants already sent 1843, then the list of the new ones. — Can you send me a list of those where you have altered my names? for example: 1. 2. 3. 4 correct. 5. is such and such a plant. 6. 7. 8. 9 is variety of such such 10 – 11 and so on. If it will not take you too much time and trouble you would oblige me much — but if you intend printing in the April number of Silliman, it will hardly be worth while to trouble you.

Very truly

Yours &c. &c.

George Engelmann

Do you ever hear anything from our friends in Berlin? I have written lately to Klotzsch on account of Rusopitac.

Continuation of Lindheimer's Collection 1846

245. Sedum sparsiflorum Nutt. naked sandy spots in the San Bernardo prairie between Brazos & Colorado, April & May.

246. Galium virgatum Nutt. Prairies west of the Brazos, in patches. April.

247. Bidia tricocca Torr & Gr. Cespitose in dry sterile places in the prairie 16 miles west of San Felipe. June. — [illegible] irregularly grooved depressed reticulating in basal ridgelets, dorsal &c. All specimens examined by us are bicapellary.

248. Coelostylis texana Torr & Gr. Shady woods along the Millcreek west of San Felipe July.

249. Aster Drummondii Lindl. in shady moist woods and in thickets along water courses, from Houston to the Brazos & Colorado. — Sept & Octob. — We find the stems of some of our specimens more scabrous than pubescent, and also the leaves less velvety on the lower side, and sometimes nearly smooth on the upper. Involucral scales smooth with ciliate margins, especially the outer ones. Achenia more or less sometimes only at the top hairy, or smoother when ripe. Disflowers turning red, as in Aster sagittifolius. Specimens collected in July on the prairie, at the margin of woods are much more tomentose.

250 Inacta aspera asteroides &c. Dry prairies west of the Brazos, April to July.

251 Bellis integrifolia Mich. Light sandy soil in prairies west of the Brazos with Sedum sparsiflorum & Schrankia angustata, April & May. — Our heads are only half as large as in the common forms of this plant, and the rays fewer, but we can not discover any other difference.

252. Solidago angustifolia Elliott Wet prairies and marshy spots west of the Brazos, October. — Not at all in brackish swamps and not even always on wet soil, for we have specimens collected on high and dry prairies between Houston and the Brazos, beginning to flower in June. — Inflorescence somewhat scabrous, leaves scabrous on the margin; scales of the involucre acutish, the exterior ones mucronulate, the innermost rather obtuse. Rayflowers in the Brazos specimens 5 to 8, disflowers 7 to 13, in the Houston specimen rayflowers 6 to 10, disflowers 10 to 13. Achenia pubescent.

253. Isopappus divaricatus Torr & Gr. Light sandy soil in prairies and open woods west of the Brazos. Aug. & Sept.

254 Isopappus Hookerianus Torr & Gr. In patches on sandy prairies and on sandstone rocks on the Colorado. September. — Our specimens are from 6 inches to 2 feet high, mostly branching from the base, but also simple.

255. Grindelia inuloides Willd. In patches in the prairies 30 miles west of San Felipe July & August. — Stems 5 to 6 feet high, branching only above.

256. Calymmandra candida Torr & Gr. Margins of woods and open woods west of the Brazos. April & May.

Note. In the pinewoods near Houston Mr Lindheimer collected two or three specimens of a new Pleuroncodon, which we are sorry not to be able to communicate to the subscribers but of which we will give at least a description.

Pleuroncodon leptostachyum, caule herbaceo ramoso, foliis inferioribus lanceolatis, superioribus linearibus, omnibus undulato-denticulatis supra glabris, subtus albo-tomentosis; floribus capitulorum sessilibus, in spicam elongatam interruptam congestis; involucri squamis exterioribus lanceolatis, acutis, brevibus, dorso tomentosis, interioribus linearibus elongatis, apice acuminato-setaceo glabriusculo

Open pinewoods near Houston, fl. in Sept. — Easily distinguished from the only other north american species Pl. pycnostachyum, by the branching stem, linear leaves, interrupted spikes etc but perhaps too near Pl. interruptum DC. from Southamerica but apparently distinguished by the narrow undulate-denticulate leaves, which in Pl. interruptum are described as

2/ oblong-lanceolate, irregularly dentate. — Our specimens are from 2½ to 3 feet high, more or less branching; spikes 5 to 7 inches long, slender, interrupted; glomerules composing the spike formed below by 3 to 5 or 8, above by fewer heads, mostly sessile, but in one or two instances we find the lowest ones pedicellate; — at the end of the spikes the heads are often single. Fistillate flowers numerous, in many series, perfect ones 2 to 4 in the centre.

257. Silphium scaberrimum Ell. Shady woods west of the Brazos near Industry. May to July. Ovate or oblanceolate obtuse chaffy scales adhering to the base of the broadly winged somewhat pubescent achenium.

258. Dalea Ludoviciana Torr & Gr. Sandy open Post oak woods west of the Brazos, May to August. — From a large perennial rather fleshy root rise many stems 2 to 5 feet high, branching above; lowest leaves rhombic-ovate or ovate-lanceolate, acute, tapering into a petiole of nearly their own length or shorter; a little higher up the bases of the petioles become widened and clasping as in Silphium perfoliatum, and the upper leaves are entirely connate-perfoliate, without any show of petioles. — Exterior involucre in all our specimens sharply four-angled, scales rhombic-oval, acute or the margin and the inner side whitish ciliate-pubescent. Ray flowers with a hairy tube (not only involute), tube of disc flowers likewise hairy.

259. Helianthus lenticularis Dougl. In low shady woods and on wet prairies between the Brazos & Colorado; July to Septemb. — In the prairies it is lower, but in the bottom wood it attains the height of 10 and 12 feet; the lower leaves are 6 to 9 inches long and 5 to 8 inches broad; flowers 2½ to 3½ inches in diameter; achenia oval, thicker than usually in this genus.

260. Helianthus Maximiliani Schrad. Prairies, margin of woods, along fences and in deserted fields in patches together; common from Houston to the Colorado; fl. in October and November; the latest flowering species in Texas. — It grows 4 to 7 feet high, much branched. Our specimens from Houston have a slightly scabrous, those from the Brazos a canescently scabrous involucrum; chaff mostly entire, abruptly acuminate and at the apex pubescent, rarely with two very small lateral teeth. The lowest leaves are slightly petioled, at both ends long attenuate-acuminate, very slightly repandly denticulate, equally scabrous on both sides.

261. Helianthus asperrimus n. sp. perennis, caule erecto simplici infra glabriusculo, supra hispido; foliis alternis, lanceolatis, subsessilibus integris s. obscure denticulatis, penninerviis, rigidis, supra subtusque hispido-asperrimis; capitulis singulis terminalibus s. pluribus in axillis foliorum superiorum breviter pedunculatis; involucri squamis lanceolato-linearibus acuminatis, apice squarrosis, canescenti-hispidis, oloribus disci puberulentibus; achenii glabris squamis pappi elongatis, lanceolato-subulatis fimbriatis.

Covering large patches of the prairies between the Brazos & Colorado; October. — Near H. giganteus L. but easily distinguished by its great roughness, low growth, simple stem etc; also near H. cinereus Torr & Gr., but apparently distinguished by the narrower, lanceolate, not ovate oblong, tripli-nerved leaves, by their great roughness, by the more or less squarrose involucre and by the glabrous achenia. Perhaps too near H. Maximiliani Schr., but distinguished by

3/ its low simple stem, more canescent, broader and less squarrose scales of the involucre. — The simple stems rise from a thickened rhizoma 2, 3 or 3½ feet high; in the flowering plant they are naked below with larger crowded leaves about the middle and smaller and fewer ones towards the top; leaves contracted at base, not sessile, petioled, in all our specimens conduplicate and curved backward, entire, sometimes slightly denticulate, very rough but more so on the upper than on the lower surface. Heads from one to five, the terminal one with a long (2 to 4 inches) peduncle, the lateral ones with very short (½ to 1 inch) peduncles. Heads 2 to 2½ inches diameter; involucral scales linear-lanceolate frequently with setaceously acuminate and spreading tips; chaff of the receptacle mostly pubescent, at top abruptly acuminate, with two very small lateral teeth; rays 18 to 21; disc flowers slightly hairy externally, especially near the throat, proper tube short; achenia (unripe) glabrous with 2 lanceolate subulate, chaffy fimbriate scales of their own length.

262. Helianthus grosse-serratus Mart. & Gal. sericeus, banks of rivulets and margin of woods, west of the Brazos, August to October. — This appears to be the original form of this very variable species; stem very smooth and glaucous, leaves rather obtuse at base, coarsely serrate with divaricate teeth, tomentum on the lower very soft silky. The involucral scales are nearly smooth and many nerved; chaff mostly entire, acute, but not abruptly acuminate, lacinias of the disc flowers very frequently with a third (middle) nerve. — Near St Louis several other forms are common, with opposite or alternate leaves, tomentose or only slightly canescent below, with strongly ciliate or nearly smooth scales of the involucrum, but all have leaves with a very acute base and slight and appressed serratures, and narrower, mostly 3-nerved involucral scales.

263. Helianthus grosse-serratus Mart. β. scabrior. This variety was collected with H. Maximiliani and the specimens of both were mixed. They are readily distinguished however by all the leaves being petioled, more canescent than scabrous on the lower surface, and appresse-serrate (or nearly entire); they are very acute at base, and the stems, though somewhat glaucous, are slightly scabrous throughout. The large single (lower) leaves, laying in the same envelopp with this and H. Maximiliani evidently belong to this species; they are petioled, attenuated at base, serrate, and canescent on lower surface.

Helianthus Maximiliani, asperrimus, giganteus, and grosse serratus are very near each other. H. grosse-serratus is principally distinguished by the petioled leaves (which are only in one form really coarsely serrate!) and the glaucous smooth or slightly scabrous stem; H. giganteus by the hirsute or pilose stem and leaves; H. Maximiliani and H. asperrimus by the sub-sessile leaves which are scabrous and equally green on both sides. — The genus Helianthus is one of the most difficult of all those found in N. America, as we can hardly rely on any one constant character, they are all more or less variable and there are intermediate forms, which apparently connect the most distinct species.

264. Coreopsis tinctoria Nutt. Prairies west of the Brazos, May & June; Perennial! – This ornamental plant grows as far north as the southwestern part of Missouri.

265 Dysodia tagetoides Torr & Gr. Wet prairies near springs on the declivities of the sandstone hills on the Millercreek; August. – Perennial! Dots of the leaves orange yellow.

266. Palafoxia Hookeriana Torr & Gr. Sandy post-oak-woods near Industry in patches; fl in August. – This as well as P. texana DC are annuals.

267. Actinella linearifolia Torr & Gr. In the declivities of sandstone hills near Industry. May & June. – Rays yellow, turning white when fading.

268 & 269. Senecio ampullaceus Hook annuus (? s. biennis ?) glaberrimus s. flocculosus, caule erecto fistuloso, striato, superne ramoso; foliis inferioribus ob. ato-spathulatis in petiolum decurrentibus, superioribus ovato-lanceolatis acutis, basi subcordatis, semi amplexicaulibus; omnibus subintegris s. denticulatis; cyma corymbosa s. fastigiata. pedicellis apice demum incrassatis; involucro squamis setaceis paucis calculato; radiis 7-9. achenii strigoso-canescentibus.

α. glaberrimus (No. 268) foliis glaberrimis angustioribus, plerisque basi angustatis, integris s. parce dentatis; cymis fastigiatis, involucri squamis lineariis acuminatis, glabris. S. ampullaceus Hook.

β. flocculosus (No. 269) caule foliisque junioribus flocculosis, foliis latioribus, superioribus e basi lata cordata acuminatis, saepe grosse dentatis; cymis corymbosis, involucri squamis linearibus, acutis s. obtusiusculis, apice ciliatis.

In the prairies between Brazos & Colorado α on wet places; β on loose sandy soil of the deserted ant hills together with Argemone mexicana. Fl in April. – This we have no doubt is Hooker's S. ampullaceus, though it certainly is an annual or biennial plant as our numerous specimens collected with roots, prove. We can not sufficiently distinguish with forms; the glabrous variety grows in wet soil, is much more slender, with narrower leaves; on a few specimens we can observe a remnant of flocculency. The variety from dry places is much stouter, with broader, thicker and darker green leaves, often whitish below; whole plant more or less flocculose; flowers 50 or 60 in each head.

270. Lygodesmia aphylla DC β. Texana Torr & Gr. – Prairies, margins of woods west of the Brazos. June & July. – Root penetrating deep into the soil forming elongated tubers.

271. Chrysopsis grandiflorus Nutt – Prairies near San Felipe, in groups, but not closely together; – fl in April. – Perennial! – Root slender bearing a few inches below the surface a globose or ovate tuber, similar to the root of Cynthia dandelion DC; leaves nearly oblanceolate, sinuately dentate, commonly runcinate, or pinnatifid, lobes triangular or angulate toothed, divaricate. Scapes several from one root, 6 to 12 inches high with or without a bract in the middle; heads as large as in C. carolinianus DC

5, 272 Asclepias (Otaria) Lindheimeri n. sp. rhizomate perpendiculari incrassato caulem herbaceum pubescentem singulum erectum s. plures adscendentes emittente; foliis oppositis ovatis obtusis s. lanceolatis acutis in petiolum brevem attenuatis, utrinque puberulis; pedunculis brevissimis lateralibus pedicellis gracilibus, pubescentibus, corollae lacinias oblongis acutis, pedicello dimidio longioribus; corollis ad apicem sensim dilatatis, 3 lobis, gynostegium plus quam duplo superantibus; processubus binis, altero exserto incurvo, altero brevior incluso erecto folliculis ovato-lanceolatis acuminatis puberulis, carina exteriore corolla innocuis armatis.

In black clayey soil near Industry from June to August. – Stems one or generally several from a thick tuberous perpendicular root, erect or mostly ascending 6 to 16 inches high; leaves mostly broadly oval and obtuse but in some specimens (generally the taller ones) lanceolate and acute; umbells nearly sessile between the base of two petioles; flowers large greenish; calyx pubescent one third the length of the ~~petals~~ corolla; segments of corolla about 5 lines long 1 line broad, pubescent exteriorly; cucullus of the same length; nearly three times as long as the slightly stipitate gynostegium, at base auriculate very narrow about the middle widened towards the point, and doubled up, but not tubulous when expanded, they appear 3-lobed middle lobe crenulate, rounded lateral ones shorter acutish; horns double, the shorter one erect included the longer one exserted, curved inwardly and nearly horizontally; both horns (as horns included) and the inside of the cucullus minutely pubescent; × cusps of the anthers membranaceous, roundish obtuse, erect.

× note. The only other Asclepias with a bifurcated horn, known to us, is A. obtusifolia Mich. both prongs are slightly exserted, but the inner one (that next to the inner surface of the cucullus) is as in our present, shorter than the other

follicles ovate-lanceolate long acuminate, 8-angled, angles often somewhat tuberculated, exterior one with soft spines or a dentated crest. 11 (inch). We find specimens with nearly ripe fruit on the lower part of the stem and open flowers above without intermediate half grown fruit, so that the same plant appears to flower at different times during the season. – Very distinguished from any other north american species, and near A. longicornu Benth. from Mexico; in Decaisne's Description in DC. prodr. we can not find any other difference than the shorter cucullus and the roundish ovate and canescent ~~cucullus~~ follicles; it is not stated, whether the cucullus are three lobed, nor whether they have a double horn.

It may not be improper to add here the description of another new species of Asclepias, found in the neighborhood of St Louis Mo.

Asclepias glaberrima n. sp. glaberrima ~~tenuissima~~ erecta, foliis ovatis, obtusis, mucronatis, basi subcordata sub sessilibus transverse et reticulatim venosis, pedunculis foliis brevioribus, umbellato-multifloris; pedicellis basi bractiis lanceolato-linearibus acutissimis fultis; sepalis ~~linearis~~ lanceolato-linearibus acutis, alabastrum dimidium superantibus; corollae lacinias ovato lanceolatis acutiusculis, reflexis, pedicello dimidio brevioribus; cucullis ovatis, obtusis, crenulatis, basi bian

5. Gaurivalvates, gynostegium breviter stipitatum multo superantibus, processu bififormi, acutissimo supra gynostegium horizontaliter incurvo.

Wet meadows of the American bottom, opposite St Louis. ♃. – August. Stems erect, 2 to 3 feet high; leaves 4 to 6 inches long, 2 inches broad, subcordate, upper ones truncate at base, with a sharp mucro, not appressed; light green, but hardly glaucous, very delicately nerved; only the upper ones quite sessile, the lower ones with a very short petiole; umbells with many lanceolate linear bracts, which are more conspicuous than in most other species; pedicells stout, sepals acuminate, green. corolla externally green, internally reddish cinereous, laciniae about 5 lines long, ovate lanceolate acutish, longer than the coronlli; coronlli purplish, much longer though not twice as long as the shortly stipitate gynostegium, ovate, hardly lobed, but crenulate or emarginate. horn arising from the base, very acute, curved horizontally over the gynostegium, cusps of the anthers ovate, acute, covering the stigma.

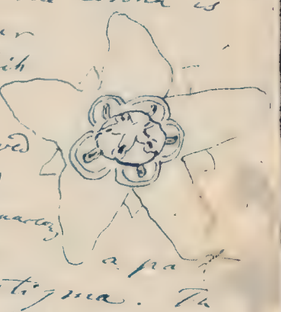
Very near A. amplexicaulis Mich, for which plant I took it, till I had occasion to compare specimens from North Carolina; but a much larger, and stouter, erect plant; leaves less cordate, not clasping ~~amplexicaule~~ nor appressed, hardly glaucous, strongly mucronate, more delicately veined; pedunculs and petiolus stouter, flowers nearly twice as large; sepals more acute and larger in proportion to the corolla; coronlli much longer than the gynostegium, with a long, acute, horizontal not short nearly erect obtusish horn; pollen masses nearly three times as large.

273 Gonolobus? parviflorus n. sp. caulibus pluribus basi ramosis adscendentibus s. prostratis, hirsuto-pubescentibus, foliis ovatis, cordatis, acuticuspidatis, breviter petiolatis, utrinque pubentibus; pedunculis brevissimis s. subnullis; floribus geminis; pedicellis basi bractea subulata suffultis petiolo plerumque longioribus; calycis hirsuti lobis ovatis ~~trinatis~~ acutis, corollae laciniis ovatis, obtusis, extrorsum subpilosis, introrsum glabris (ex viridi purpureis), corona staminea cyathiformi, gynostegii basis cingente, 5-lobis lobis rotundatis emarginatis, margine tenuiori cinctis, supra processu lineari scaphideo arcuato ornatis; folliculis ovatis, utrinque attenuatis coriaceis, muricatis, pubescentibus; seminibus (rufis) orbiculatis, marginatis, comosis.

In open post oak wood near Industry, on sandy soil, from April to June. – This is apparently no Gonolobus proper, and is on one side nearly related with Lachnostoma prostratum Dne, and on the other still nearer with Chthamalia biflora Dne and Chth. pubiflora Dne. But the very peculiar structure of the corona might characterize it as a distinct genus, if it should be settled, that any diversity of form of this organ could constitute a generic difference in this family. However as Mr Decaisne himself, the monographer of this family in Delandolle's Prodromus

7. includes Gonolobus hirsutus Mich and G. macrophyllus Mich with their campanulate corona with 10 long subulate and 5 short triangular teeth together with G. laevis Mich with its annular five lobed corona, in the same genus, Gonolobus, of which he says: "corona staminea – annuliformis – lobis integris" – we not only consider ourselves authorized ~~not only~~ to refer our plant also to Gonolobus, but we also believe that some species at least of his genus Chthamalia (probably the northamerican ones) must be restored to ~~your~~ the same genus.

Our plant sends from a perennial somewhat tuberous root mostly several weak stems, 6 to 15 inches high, branching at base, ascending or apparently prostrate; leaves opposite, cordate, with an open sinus, 1 to 2 inches long, ½ to 1½ inches broad, on very short (2 to 4 lines long) petioles; uppermost leaves smaller, nearly sessile, ovate lanceolate and often more truncate than cordate at base. Flowers mostly towards the top of the stem and branches, with pedicels longer than the petioles; only where they occur lower down the stem the pedicells are occasionally shorter than the pedicells. There is a common pedunculus, sometimes a line long, but mostly only half a line long; always bearing two pedicells with 2 subulate bracts at their base. The greenish purple corolla is very slightly hairy outside and perfectly smooth within, ~~short~~ openly campanulate, with the lobes spreading about 2 lines in diameter. The corona is cup shaped, 5 lobed, the lobes rounded, fleshy, with a thinner margin and in the middle with an incurved processus which reminds us of an Asclepias; this processus is connected at base with the middle nerve of the anther, and is free and incurved at the obtuse point where it is on its upper (or inner) surface excavated something like a spoon. The membranaceous cusps of the anthers are triangular, acute and cover a part of the very obtusely 5-angular somewhat convex stigma. The extremely small horizontal pollen masses are oblong, slightly curved and hardly attenuated at their exterior (attached) end.



This plant appears to be very near Chthamalia biflora Dne from Red River and only distinguished from it by the petiole being shorter than the pedicells, by the smooth inner surface of the corolla and by the peculiar corona; it is most probably a congener of it.

I have three Gonolobus a brown (Missouri & Arkansas), a yellowish (Arkansas) and a green (Ark. Louisiana Texas). The first ones are hardly to be distinguished (I have not got the fruit); the green one I take to be G. laevis Mx, but believe that G. viridiflorus Nutt is the same; glabrous greenish flowers, ribbed follicles, a small indistinctly 5-lobed corona, and 5 fleshy projections of the centre of the anthers, under the very narrow membranaceous cusps or rather margins. What is G. subsessilis A Dc? – I do not like Decaisne entirely; why Acerates so far from Asclepias? Why Anantherix paniculatus (I take it to be a plant which I have from Missouri, Arkansas & Texas with open not reflexed corolla & open, not erect, very curious corona) drawn to Acerates, why otaria a subgenus of Asclepias when many other true Asclepias have biauriculate coronlli and not a few have them longer than the gynostegium. Why this arrangement with gonolobus, mentioned above.

My dear Doctor

St Louis, Febr. 20th 1845

two or three days ago I received your letter of Febr 3d and the next day the very interesting pamphlets. What an eternal pity that government will not expend a few thousand dollars more in these expeditions and employ also a botanist, geologist etc! — You will now have my first descriptive letter, and here the second; the others will follow as soon as possible. The Cactus's are ready packed for you, but I am yet afraid to send them on account of your cold winter; — here the hazel begin to bloom, the weather is delightful. — I suppose you will find no difficulty in ~~ascertaining the~~ referring the plants sent you to the numbers in this and the last letter, some alteration became necessary, a few I will have to send you, so vesicaria; Helianthus Maximiliani sent you may be the H. grosse serrata P. and the large leaf with it undoubtedly belongs to this plant; both were mixed up and I did not observe it before laying aside your

If the distribution will pay Lindheimer any thing for the seeds etc I will be all right. But I don't want you to do so if you must, pay me some trouble and expense enough in that way.

Wm Nicollet

Dr Asa Gray

Cambridge

Mass

Paid

part. What do you say to the Gonolobus and my description of it? I do not like it entirely but can not describe the singular thing better. — But above all I should like to hear your views of the Cactus species. Tell me whether my Mammill. similis & sulcata and Opunt. puberula are new or are really the same as Muhlb. plants? I have requested Wiley & Putnam to send my De Candolle vol IX as soon as published. — I should like to retain Lindh. Collections till we have more, but some subscribers become impatient and what is still more important, Lindheimer must have money, he wants very little, and I ~~can~~ not pay him any longer for his plants as I have done heretofore if I do not get any returns from the subscribers. I shall therefore distribute the plants as soon as I am through with the examination. — — Can you procure for me Prof Kirtland's different papers on western fishes in the Boston Journal? or can they be procured in any way? and can the whole journal not be got for our (Institution here, western reading of Mus. Sc.) perhaps for an exchange of objects of nat. history, if not as a present? — The fish papers I should like much to get, as I take a great interest in Ichthyology. — I shall write Lindh. about mosses for Sullivant, he says however, there are few in Texas! — Very truly yours G. Engelmann

274. Lisianthus Russelianus wet prairies with clayey soil, west of the Brazos. July & Aug.

275. Phlox Drummondii sandy soil, principally near watercourses, west of the Brazos.

Among Lindheimer's plants I find a single specimen of another annual Phlox, collected on hard prairie soil: leaves oblanceolate linear, smooth, ciliate at base; stem nearly smooth, panicle pubescent; lobes of calyx setaceous & aristate, nearly twice as long as the calyx tube; corolla pubescent externally with acute or rather mucronate lobes, half as large as the corolla in Ph. Drum. and much paler. – perhaps only a smooth dwarf variety?

276. Convolvulus Pickeringii Torr. dry sandy prairies west of the Brazos; fl from May to July [identical with a specimen under that name received from Mr Curtis] many prostrate stems from a very long and thick ligneous root.

A few specimens of the following apparently new Convolvulus were also sent. I have laid aside one for you and seed; if you approve of it, it may be inserted in a note.

Convolvulus lobatus n.sp. radice perenni, caulibus pluribus prostratis, pubescentibus, foliis hastato-lobatis adpresse pubescentibus incanis; lobo medio elongato sinuato-dentato; pedunculis singulis, pedunculis medio bibracteolatis, petiolo longioribus; sepalis ovatis, obtusis pubescentibus, margine dense ciliatis, corolla infundibuliformi (alba) glabra extus ad nervos pilosa, stigmatibus cylindricis, capsula glabra; seminibus nigris negosis glabris.

On Sandstone rocks near Industry, west of the Brazos; fl from May to June. Stems prostrate 3 or 4 feet long, flowers ~~with~~ rather small, about 6 or 7 lines long and as wide.

277. Cuscuta cuspidata n.sp. B. Bottom lands of the Colorado river, August. – For the description see No. 125.

278. Lithospermum mandanense Spreng. Clayey prairies near Industry, April & May. – One or several erect stems from a black or rather dark purple thick fusiform root, simple below, branching above; whole plant strigosely ~~pubescent~~ canescent, leaves above rather scabrous; lowest leaves oblanceolate or even obovate, obtuse, upper ones linear-lanceolate and linear, acutish; flowers in a very loose leafy cyme; calyx longer than the tubular corolla, lobes of corolla roundish, crenulate, hairy outside, erect (always?); nuts white shining acutish, with a sharp ridge on the inner side and impressed dots on the inner face. – We can not distinguish this plant from specimens collected on the upper Missouri; both are not "decumbent". – We have received a few specimens of a similar plant, collected in prairies near Houston, which has a much more branched stem and smaller obtuse nuts, with only two rows of impressed dots along the carina; flowers not seen. Probably a variety of our plant.

279. Phacelia erectiflora n.sp. piloso-pubescens, radice annua caulem singulum erectum s. plures ascendentes simplices emittente; foliis inferioribus petiolatis, obovatis primordialibus integris; caeteris inciso dentatis, superioribus sessilibus laciniato-pinnatifidis; racemis terminalibus simplicibus, pedicellis fructiferis erectis calycem aequantibus; calycibus piloso-canescentibus, laciniis erectis oblongo-linearibus obtusiusculis, corolla extus pilosa margine denticulata-crosa, capsula 12-sperma.

In sandy soil on the banks of the Brazos near ~~Industry~~ San Felipe, March. – This with the following species belongs to a subgenus of Phacelia, of which I can find no mention; it may be called Pedicellospermon as it is distinguished from Phacelia proper by having 12 ovules in the 2-celled ovary, and usually 12 angular semicircular seeds in the hairy capsule. Tube of the corolla also with 5 pairs of winglike scales which form 5 (nectariferous?) grooves correspondg with the lobes of the corolla, scales often of unequal size in the same flower; filaments hairy below the middle

2/ — P. coeruleiflora is a grayish looking very hairy plant; stems in smaller specimens simple, in larger ones several, dividing at base, but not branching; from 4 to 7 inches high; pedicels as well as calyx segments erect, giving the specimens a stiff and compact appearance; corolla apparently pale blue 8 to 12 lines in diameter.

280 Phacelia patuliflora n.sp. pubescula, radice annua, caulibus plures prostratos s. adscendentes sabramosos emittente; foliis obovatis, obtusis, omnibus basi attenuatis incriso-dentatis, inferioribus petiolatis, superioribus sessilibus; racemis terminalibus simplicibus; pedicellis fructiferis patulis s. sub recurvis calyce multo longioribus; calycibus pilosis, laciniis patulis ovato-oblongis, obtusis; corolla extus pilosiuscula margine denticulato crosa, capsula 12-sperma.

In woods near San Felipe, March and April. A larger plant than the foregoing stems from 6 to 12 inches long, mostly prostrate; whole plant more green, with fewer and shorter hairs; leaves less deeply incised; with the teeth always ovate obtuse; racemes lax with much longer pedicells; corolla smaller, about 6 lines in diameter. Deep blue, yellow at base.

281. Solanum mammosum Lin.? foliis basi inaequali truncatis s. subcordatis, angulato-5-7-lobis, lobis repando-denticulatis utrinque stellato-tomentosis, ad nervos supra subhispidis aculeatis; pedunculis lateralibus, cymosis, pedicellis fructiferis reflexis; calycibus armatis s. inermibus, truncatis, laciniis subulatis; corolla extus stellato-tomentosa.

Roadsides in prairies between the Brazos & Colorado; June. — A stout branching perennial (?) plant, distinguished from S. carolinense by the much denser whitish covering, by the cymose inflorescence, the larger bluish flowers and the truncate calyx tube with abruptly subulate teeth. Fruit not seen. — We have a specimen of a similar plant from the same region, with larger flowers and triangular acute lobes of the leaves; probably a variety of our species.

282. Pentstemon flammeus n.sp. glaberrimus, glaucus, foliis infimis spathulatis in petiolum attenuatis, superioribus ovatis, basi lata cordata amplexicaulibus, summis bracteisque perfoliatis; racemo laxo, pedicellis in axillis bractearum singulis bibracteolatis, simplicibus s. bifloris, pedicello alterno breviore; corolla tubulosa, cum staminibus et filamento sterili incluso glaberrima, seminibus angulatis.

Dry sandy soil in open woods west of the Brazos, May & June. — A remarkable plant on account of its splendid reddish-yellow flowers with scarlet borders, which form a pleasing contrast with the bluish glaucous leaves. It is also the only Pentstemon known to us with a smooth fifth filament. — Stems 18 to 24 inches high, lower leaves 2 to 3 inches long, 1 inch or more wide, upwards gradually smaller; racemes lax, few flowered, 8 to 10 inches long, lower and upper pedicells in the raceme one flowered, middle ones with 2 flowers, the lateral flower on a shorter pedicel; pedicels erect, flowers horizontal; corolla 14 to 16 lines long, limb 7 to 8 lines wide.

283. Gratiola sphaerocarpa Ell. On ponds and rivulets. February to April, but also through the whole summer. The specimens collected later in the season are smaller, more erect, with narrower leaves.

284. Castilleja indivisa n.sp. biennis, unde erecto, ramoso, piloso; foliis lanceolato-linearibus integris (rarissime trifidis) nervosis, e basi lata, semiamplexicaulibus angustatis, piloso-pubescentibus; racemo demum elongato; bracteis indivisis, inferioribus e basi late ovata, semiamplexicaulibus angustatis herbaceis, superioribus versus apicem dilatatis, obtusis, coloratis; floribus arcte sessilibus; calycis bifidi laciniis retusis; corollam dorso glanduloso-pubescentem vix aequantibus; stigmate capitato, subbilobo, styli diametrum ter quaterve excedente.

Prairies from Houston to the Colorado, fl. from the end of March to June, very near the northern Castilleja (Euchroma Nutt.) coccinea, with which it agrees in general habit though it is much more leafy, especially toward the base of the stem, distinguished from it by the usually entire leaves and bracts which are half clasping with a broad base, not sessile with a narrowed one; by the closely sessile, not shortly pedicelled flowers and the thick stigma which is about twice as large as in the northern plant. We have not seen this one from Texas.

285. Hedeoma citriodora n.sp. suffruticosa, ramosissima, pilis crispulis pubescula, foliis brevissime petiolatis, oblongo-linearibus, integris s. versus apicem denticulatis; cymulis in axillis foliorum 1 to 3 floris; floribus pedicellatis, calyce tubuloso, incurvo, bilabiato pilis clauso, labii superioris dentibus 3 lanceolatis, inferioris 2 subulatis, longioribus; corollae tubo longe exserto, limbi labio superiore emarginato, inferiore majore 3-lobo, lobo medio ~~dilatato~~ obcordato; rudimentis filamentorum superiorum brevibus; achaeniis oblongis.

On sandstone rocks near Industry, July. — The whole plant has a strong taste and smell of lemon peel. — Stems numerous from a stout lignous rhizoma 8 to 12 inches high, somewhat shrubby, much branching; leaves small 4 to 6 lines long, 1 line wide, pubescent or a little scabrous, veined and dotted; calyx near 3 lines long unequal, corolla long exserted, about 6 lines long.

286. Stachyastrum scutellarioides n.sp.

Stachyastrum n.gen. calyx tubuloso-campanulatus, sub-septem nervis, reticulatus, bilabiatus, labio superiore lato, breviter trilobo, dentum apice recurvo; inferiore angustiore bifido, dentum incurvo; corolla tubo longe exserto, intus nudo, in faucem dilatato, limbi bilabiati labio superiore breviore plano integro erecto, inferioris patentis trilobi lobo medio emarginato; stamina 4, inferiora longiora, filamenta superiora ad medium corollam adnata, omnia medio pilosa; antherae approximatae loculis divaricatis didymae, ad rimam loculorum breviter ciliatae; stylus glaber, apice bifidus, lobis aequalibus; achaenia subglobosa sicca, laevia.

Herba annua texana, Stachydis habitu unde nomen. Foliis sessilibus ovate serratis, glabris; floribus oppositis in spicam laxam pubesculam dispositis.

St. scutellarioides n.sp. In heavy black soil on the prairies near Cat spring, west of the Brazos. fl. April & May. — Annual, stem about 1 foot high, erect, acutely 4-angular, branching above, glabrous; lowest leaves ovate obtuse, attenuate into a petiole, slightly serrate; upper ones ovate-lanceolate, half clasping, below with a narrow, the upper ones with a broad base, acute, acutely and unequally serrate, two inches and more long, about 6 lines wide, smooth; inflorescence pubescent; bracts ovate acuminate, small; flowers opposite on short pedicels, forming a lose spike; calyx about 1½ lines long reticulated and about 7 nerved (with 5 medial and on the upper lip two intermediate ones) 2-lipped, upper lip with 3 short roundish cuspidate, lower lip with 2 lanceolate acute lobes; after

4) flowering the upper lip is thrown back at tip and the lower incurved so as partly to close the interior, approaching the true Scutellarineae. Corolla about 5 lines long, apparently flesh colour with a yellow throat. upper lip erect entire retuse, much shorter than the lower one, which is 3-lobed, lobe horizontal, middle one. broadest, emarginate or slightly bilobed, lateral ones entire; corolla smooth inside, but stamens hairy at the middle; anthers purplish, smooth, but with short cilia or teeth at the sutures. — This genus is apparently intermediate between Scutellarineae and Melissineae, but nearer the first, on account of the shape of the calyx, in flower and fruit.

287. Brazoria annua n. sp.

Brazoria n. gen. calyx campanulatus indistincte nervosus, reticulatus, bilabiatus, labio superioris brevissime 3-lobi lobis truncatis, mucronatis, ~~denticulatis~~ demum rejectis; inferioris breviter bilobi, demum incurvi, calycem fructiferum claudentes ~~labio dentis~~, lobis omnibus denticulatis; corollae tubus exsertus, intus, prope basin pilosus - annulatus; facie inferiore sub fauce concava impressa intus palatum referente; limbi bilabiati undique crenulati labium superius galeatum bilobum, inferius horizontale trilobum, lobis bifidis; stamina 4 inferiora longiora; sub galea inclusa; filamenta supra medium corollae adnata, ubi pilosa, incrassata; antherae didymae, ciliatae; stylus glaber, apice bifidus, lobis aequalibus, brevibus; achenia acute triangulata sicca, adpresse pubescentia.

Herba annua texana ad Scutellarium proxima accedens, ramosa foliis glabriusculis, sessilibus, eroso-denticulatis, floribus oppositis in spiram densam pubescentem contractis. Nomen a loco natali ad fluminem Brazos.

Brazoria annua n. sp. In sandy soil on deserted antihills in the prairies near of the Brazos, with Argemone mexicana, Datura stramonium, Helianthus cucumerifolius, Phlox drummondii etc. fl. May & June. — Annual, stems several, ~~6 to~~ 8 inches high, branching from the base, or simple, pubescent; leaves 2 to 3 inches long 6 to 10 lines wide nearly smooth; lower ones obovate obtuse, attenuate into a petiole upper ones ~~lower~~ sessile oblong lanceolate acutish, uppermost somewhat clasping, all irregularly denticulate; spike compact elongated; bracts ovate acute, nearly as long as the very shortly pedicelled hairy calyx; calyx nearly 2 lines long and as wide, closed in fruit, with the upper lip recurved; corolla of a pale rose colour, with yellow dots, about 4 lines long. tube below the lower lip thrust inwardly so as to form a prominent palate in the throat; upper lip with two acute lobes, lower one with 3 obtuse ones, which are again deeply emarginate or 2-lobed; filaments especially the lower (anterior) ones remarkably thick especially in proportion to the small ciliate anthers connected with the corolla for more than half their length and hairy at their proper base near the base of the corolla and again above, where they ~~detach~~ become free from the tube. — The genus is very near Scutellaria but distinguished by the shape of the calyx, the lips of which are lobed and which is entirely persistent; and by the corolla which with its regular palate resembles the corolla of some Personatae.

288. Physostegia dilatata n. sp. erecta, glaberrima inflorescentia tenuissime pubescente; foliis infimis oblongo-lanceolatis obtusis, integris, sinuato-denticulatis, in petiolum alatum decurrentibus, caulinis e basi dilatata cordata, serrata, sessili angustatis, inferioribus dentato-serratis, obtusis superioribus acute serratis, acutis summis integris; spicis elongatis laxifloris; floribus subsessilibus; calycis dentibus triangularibus, sub-

subaequalibus.

Tex. prairies west of San Felipe in patches together; fl. in April. Near Ph. virginiana but a smaller plant, spike more slender, flowers smaller (9 to 10 lines long); but principally distinguished by the leaves, which are, especially the upper ones broadest at base, cordate and serrate from the base, which distinguishes this from any other species of Physostegia. The stems are 1½ to 2 feet high, and much more leafy at base than Ph. virginiana usually is, probably on account of its early time of flowering.

289. Verbena multipartita n.sp. hirsuta, caule prostrato, radicante; ramis floriferis erecto-adscendentibus; foliis tripartito-multifidis, laciniis linearibus acutis; spicis terminalibus densis, ~~corymbosis~~ ovatis demum elongatis; bracteis demum squarrosis et calycibus ~~aequalibus~~ inaequalibus ciliato-hispidis; dentibus calycis subaequalibus; corollae tubo intus retrorsum hirsuto, laciniis limbi emarginatis.

On black heavy soil in prairies near Cat spring, west of the Brazos; common, on roadsides etc. fl. in March & April. – Near V. bulbata but distinguished by the ~~much dissected leaves~~ more prostrate, rooting stem, the hairiness, the much dissected leaves, the much denser spike, smaller flowers and shorter calyx, whose teeth are not so unequal. Flower is larger than in any northamerican species with the exception of V. bulbata. Altogether a very distinct species.

As to Acanthaceae genus making has been carried to a considerable extent as I see from Endlicher and we have in stead of Elytraria Justicia & Ruellia 5 genera except in the U.S. – If that is right, I have to add 4 more! of which two at least appear to be good. I went with care through all my Acanthaceae, so far as I thought necessary and come to the conclusion that the genera have been split too much: some will certainly do better for subgenera. I have to add some remarks about some plants of the last collection.

160. Dicliptera brachiata is distinguished from the generic character as given in Endlicher by having only 2 seeds in the incompletely 2 celled capsule, when the capsule bursts the two valves separate from the top, then the half dissepiments and both sides of each valve separate from its middle part from below adhering at top, in this way the capsule separates in 8 pieces. Seed tuberculate. Cotyledons green!

158. Calophanes ciliosus if Calophanes is a good genus we have to separate also our No 157. which is well distinguished from this and from Meissners genus Diyg-andra and we may call it Panicularia. I send here a better diagnosis, which you may substitute for that of last year.

157. ~~Ruellia~~ (Panicularia) calyx 5 fidus, subaequalis; corolla tubo cylindrico in faucem intrudilabiformem sensim dilatato; limbi subaequaliter 5-fidi laciniis obtusis planis patentibus; stamina 4 corollae fauci inserta didynama subinclusa, filamenta ima basi connata, antherae bilobulares lobis linearibus, parallelis basi cuspidatis; germen bilobulare, ovulis pluribus; stylus simplex stigma simplex, subulatum secundum basi denticulo auctum; capsula unguiculata, subteres, lanceolata, utrinque acuta, 2 locularis, 8–12-sperma; semina orbiculata, compressa retinaculis subtensa.

Panicularia nudiflora distinguished from Diyg andra and Strepens by the entire stigma and cuspidate anthers from Calophanes by the larger numbers of seeds – easily distinguished from all by the paniculate flowers and the pubescent capsule; from D. strepens also by the smooth (not hairy) filaments, which are not so much connected at base.

6/290 Meophanes inconspicuus n. sp.

Meophanes n. per. Calyx 5 partitus, subaequalis; corolla hypogyna tubulosa, limbo 5 fida subaequali (erecto?). Stamina 4 corollae tubo inserta, didynama inclusa; filamenta per paria basi in ligulam connata; antherae biloculares, loculis parallelis, muticis; ovarium bilociulare, loculis 4-ovulatis; stylus simplex, stigma subulatum, basi ante anthesin (inaequaliter bifidum?); capsula bilocularis 8-sperma, loculicide bivalvis, valvis medio septiferis; semina orbiculata compressa, retinaculis uncinatis sublevia.

Herba mississippiensis et texana, erecta subsimplex, glabra, foliis oppositis, ramis axillaribus, paucifloris, corollis minutis albis, fugacibus.

M. inconspicuus n. sp. Shady low wood between the Brazos and Colorado also in similar situations near St Louis Mo (Engelm.) and in Alabama (Buckley). — Stem erect, 15 to 30 inches high, smooth, leaves ovate lanceolate attenuate into a short petiole, smooth, finely ciliate, 4 to 5 inches long, 1½ to 2 inches wide; one or more fewflowered bracted or leafy cymes, subsessile or pedunculed in the axils of the leaves. Flowers pedicelled; calyx segments hairy, subulate, nearly equal, as long or longer than the tubular corolla. Corolla 4 to 4½ lines long. Those examined by me have all an erect limb which is nearly equally 5 lobed, teeth rounded; stamens included; filaments in the flowers which I opened always bent into a knee the longer ones more than the shorter, so that the anthers all appear on the same level. Style hairy, stigma subulate, bent slanting only on the upper surface with a stigmatiferous tooth or similar division. Capsule somewhat unguiculate, subterete, smooth, about 7 lines long, with 8 roundish flat smooth seeds. — The St Louis, Alabama and Texas specimens agree minutely.

Here I add a better description of another singular Acanthaceous noticed last year as Justicia? pinguis; I send you here a few flowers, and shall send a specimen with the next opportunity. — If new we ought to describe it in a note. It is near Justicieae on account of the ringent corolla but has four anthers, and all with 2 cells! but the lower ones are much smaller and perhaps sterile. Lindheimer says these 2 are sometimes wanting, probably it belongs to the first section of Endlicher pag 703 near Cryptophragmium we may call it on account of the unequal anthers Anisandra. NB. Meophanes is intended to mean a plant similar to Calophanes, but less (meon) conspicuous if my Greek is not correct (I have no lexicon or book) please change it as you

Anisandra n. gen. Calyx 5 partitus, subaequalis, corolla hypogyna bilabiata, ringens, tubo recto, at faucem dilatato, labio superiore bifido inferiore trifido; stamina 4, corollae tubo inserta didynama, subinclusa; antherae bilociulares loculis parallelis, inferiores (posteriores) minores (sterilis!) rare carentes (Lindhei.); ovarium bilociulare, multiovulatum; stylus simplex, stigma subulatum secundum; capsula ~~oblonga~~ sessilis, linearis, subteres, acuta, bisulcata, bilocularis 12 – 20 sperma, loculicide bivalvis, valvis medio septiferis, semina retinaculis uncinatis sublevia, orbiculata, compressa, pubescentia.

Herba texana paludosa glabra ~~medianas~~ basi caulis radicante, ramis erectis, simplicibus, foliis longe lanceolatis, sessilibus floribus in axillis foliorum glomeratis, ante sessilibus; corollis minutis, albis, calycem aequantibus.

Anisandra glomerata n. spec. In swamps near Houston; fl. – October

7. Stems erect simple, rooting at the lower joints (in water) or decumbent in mud and branching; branches erect simple; leaves linear-lanceolate 4 to 6 inches long, ½ to 1 inch wide acute attenuate at base, ciliate-serrulate; flowers clustered in the axils of the leaves, closely sessile; calyx segments subulate nearly equal about 3½ lines long; corolla white nearly of the length of the calyx ringent-lips recurved; longer filaments with larger shorter upper ones with much smaller anthers; these smaller anthers are present in all flowers examined by me and they are always 2 celled but are perhaps sterile; Mr Lindheimer has four & them sometimes wanting. Style smooth, stigma subulate, simple one sided, curved; capsules about 5 lines long narrowly linear sessile nearly equidistant with 4 blunt angles and 2 deep grooves, corresponding to the dissepiments, with 12 to 20 imbricated flat roundish seeds clothed with a reddish pubescence easily rubbed off.

291. Justicia pedunculosa Vahl on the Comings creek of the Colorado on rocky soil fl. in August. — Calyx indistinctly 2 lipped segments nearly equal; tube of corolla woolly inside below the lower lip; upper lip 2 lobed reflexed, lower one deeply 3 lobed, lateral lobes horizontal, divaricate; cells of the anthers distinct, one above the other, stigma acute, simple, 4 seeds.

NB. I can not well make out, where Endlicher wants to refer this and J. humilis which appear congeners. — Meophanes has been collected by myself here and has been in my herbarium since several years, and I actually took it on first looking much at it for a dried specimen of Ruellia strepens! Had flowering & examining closely you will find flowers on your specimen too. — J. thyrsiflora, Calophanes & Panicularia ought to belong to one genus, but which distinct from Ruellia proper I am unable to say, they may form Subgenera.

292. Utricularia cornuta Mich. springy wet soil west of the Brazos April.

293. Oxygraphus biflorus n. sp. caule erecto, glabro, linearis 2 pubescentibus notato; foliis ovato-lanceolatis, obtusis, glabris, breviter petiolatis, paniculis pubescentibus involucro biflorio, semiformibus purpureo, extus strigoso, nervis herbaceis 5 notato, semi-10-fidis. ~~filamentis~~ staminibus longe exsertis (4 + 5) antheris dilongo-peltatis.

Prairies west of the Brazos in groups together, fl. July & August. I have collected the same species in Arkansas. — Stems somewhat quadrangular, 3 feet high or more, leaves fleshy, lower ones ~~narrower and smaller~~ 4 inches long 2 inches wide, upper ones narrower and smaller all very shortly petiolate; panicle large, loose, virgate, pubescent, involucrum a large 2 flowered perigonium large about 8 lines in diameter strigose outside, purple with 5 green ribs which correspond with the 5 angles of the hispid ovary, 5-lobed lobes rigid, achenia 5-angled, nipose, hispid. Apparently distinguished from all other species of the genus by the number of stamens.

294. Boerhavia diffusa Willd. On roadsides in prairies also a common weed in cultivated soil on the Colorado. Septemb & October. — Well distinguished from the plant of the Southern States by its perennial growth, its prominent large diffuse bushes with prostrate branches, also by its viscose pubescence and glandular glutinous achenia. B. erecta (I have specimens from Alabama and Louisiana) is annual, erect, rather glabrous, with entirely glabrous achenia.

295. Rivina laevis Lin. Prairies & open woods near Industry, west of the Brazos June & Octob. — Perennial with a lignous rhizoma. — Is this really R. laevis? I have a small garden specimen under that name, with long dense spikes and much smaller flowers & fruit.

8) Lindheimer sends a few specimens of 6 annual Plantagos 3 with narrow leaves P. pusilla. P. aristata P. gnaphalodes, and three with wider leaves all villous or pubescent: 2 appear new to me, one is like a large virginiana; I would distinguish them so: 1. Plantago virginiana: foliis ovatis s. ovato lanceolatis spica demum interrupta elongata albastris conicis calycis segmentis exterioribus obtusis, posterioribus acutis corollae laciniis lanceolatis, fauce antherisque convolutis, conicis seminibus oblongo linearibus flavescentibus, minoribus 2. Plantago ? foliis ovatis spica demum interrupta elongata albastris conicis, calycis segmentis exterioribus acutis, posterioribus acuminatis, corollae laciniis ovatis acutis post anthesin convolutis conicis; seminibus ovato orbicularibus rubentibus majoribus. 3. Plantago ? foliis ovato lanceolatis longe petiolatis, spica compacta brevi albastris oblongis corolla post anthesin patente. — Do you know them? — Of the Carex ovata (2) I have picked out seeds.

I see that Fisch & Meyer have made a new genus of our Polygonella erecta, gonopyrum Endl. Suppl 2. but the hermaphr. flowers have 3 inner 3 forth stamina could not distinguish it sufficiently from Polygonella.

Dear Doctor

St Louis March 5th 1845.

Here follows another big letter and I shall still have to finish a one or more before I am done. your letter of Feb 3d has been received, and also the interesting pamphlets as I believe I told you. Your & Hooker's Orchidy are ready to be sent as soon as the weather will permit. To day I got letters from Lindheimer from the middle of January, when he was collecting already violae, a shrub with spinous 3 parted leaves (Berberis ??), the Teucrium 150 etc, near Matagorda bay, and was preparing to leave for the Guadaloupe I will spur him up well. — You see that I now have got Endlicher, which is a great assistance. I have written for Kunth also. — As soon as I am done with the examination of the plants I shall distribute them into sets and send them away, it would be well soon to have the printed pamphlets. But we should have a good many more copies for our use extra, which I think will not cost much. — The tubers of Antopiros and hermani shoot buds! I shall send one to you. — Has my Mesphaeres not yet been described? perhaps from Ohio? I shall pay attention to it this Summer — Spring is opening here, every thing is coming out, Elms are partly past flowering!

Very truly Yours G. Engelmann

Prof Asa Gray
Care of Prof Peirce for
to send to me a set of the plants for
B. D. S.
Cambridge Mass.

Continuation of Lindheimers Collect. 1844

I have forgotten to enumerate amongst the plants already in the sets of 1843, but again distributed (without counting or charging for them), the following, which please insert in its place

167. Eriogonum flavum ? On sandy hills, in open places in woods &c near Industry fl. from May to August. — Bitter, astringent, used medicinally in cases (Involucer 5 toothed, not 6 toothed as Sadtler says).

175 Tragia urens here I have made an egregious blunder, which you undoubtedly have observed long since. It belongs to a genus not to be found in Sadtler, in its proper place, in the Catalogue of plants of 1843, ~~please~~ it ought to be:

175 Tragocroton erectus n sp. —

Tragocroton n. gen. flores monoici vel dioici spicati s. glomerati; spicis abbreviatis singuli bracteati. Calyx 5- (raro 6-) partitus subaequalis aestivatione valvata. Masc. petala 5 obovata s. oblanceolata aestivatione cucullata, calycis laciniis alterna. Disci 5 glandulosi insidentia, glandulis subulatis calycis laciniis oppositis; stamina 7-8 filamentis inferne in columnam coalitis, superne filiformibus distinctis biseriatim verticillatis, antheris bilocularibus. Fem. petala rudimentaria vel nulla, glandulae disci 5 subulatae calycis laciniis oppositae; ovarium sessile triloculare, loculis uniovulatis; stylus trifidus laciniis bifidis, stigmata 6 reniformia, ovulis 2 valvibus dilatata, crenulata vel emarginata, capsula pilosa trivalva, valvis 2 valvibus monospermis; semina globosa rugosa.

Herbae texanae perennes pilis albidis vestitae s. glabriusculae, foliis alternis integerrimis, exstipulatis interdum colore purpureo imbutis, pedunculis axillaribus bracteatis, floribus paucis in capitulum contractis s. pluribus elongato-spicatis, femineis ad basin spicae singulis s. paucis.

Nomen ad habitum Tragiae similem et ad affinitatem Crotonis spectans. Near Ditaxis Vahl. and Caperonia St. Hil. but distinguished by the glandular disc, by the smaller number of stamens, the shape of the stigmata and the wrinkled seeds.

Tragocroton erectus n sp. caulibus pluribus erectis simplicibus s. superne ramosis, pilosis, foliis ovatis sessilibus supra ad venas infra densissime pilosis, spicis axillaribus longe pedunculatis, folio multo longioribus; floribus foemineis inferioribus sub basi, distantibus; masculis superioribus pluribus approximatis, fl. masc. petalis obovatis s. oblanceolatis, acutis calycem aequantibus glandulis pilosis; fl. foem. glandulis subulatis calycis pilosis petalis nullis; capsulis ~~[illegible]~~ villosis, seminibus tuberculato-rugosis.

In hard soil in dry, sunny places on the banks of streams east and west of the Nueces. fl. from May to July. — Stem stout 12 to 18 inches high; leaves 1/2 to 2 inches long, 3/4 to 1 inch wide very hairy below. Spikes ~~[illegible]~~ with the peduncles about 3 inches long, naked for the lower half, female flowers one or mostly 2 below, distant. male flowers about 8 or 10 above approximate, ~~[illegible]~~ with broad acute petals, 1 line long, with purple veins; seeds more than 2 lines in diameter.

Mixed with this we find some specimens of another nearly related species, which we call

Tr. glabrior n sp. plerumque dioecus caulibus pluribus erectis simplicibus s. superne ramosis, foliis ~~[illegible]~~ ovatis sessilibus, supra glabriusculis, subtus ad venas pilosis, spicis axillaribus longe pedunculatis, masculis elongatis multifloris, folium multo superantibus; femineis brevibus, paucifloris, folium vix excedentibus, spicis raro monoecis, infra foemineis supra elongatis masculis, fl. masc. petalis obovatis acutis, calycem aequantibus, glandulis glabris. fl. foem. glandulis

2) subulatis, gracilibus, acutis); petalis nullis; capsulis adpresse puberentibus, seminibus levissime rugosis.

In Banks of Creeks near Calspring; fl. May to July. — Distinguished from the last species, to which it considerably resembles, by being mostly dioecious; by the more, ~~sometimes entirely~~ glabrous leaves which finally become together with the stem quite glabrous; by the larger flowers, the closely and thinly pubescent capsule and the less wrinkled, nearly smooth seeds. — Stems and leaves in size and shape similar to the last species; male flowers twice as large, calyx and petals about 1 2 lines long; seeds hardly 2 lines in diameter; male spikes and monoecious ones (which I have seen only in one specimen) 3 inches and more long, with 20 to 30 flowers; spikes of the female plant 1 to 1¼ inch long, with 1 to 3 flowers; for a third species see No 306.

---

296. Polygonum cristatum n. sp. caule herbaceo, volubili, angulato-striato; foliis basi subcordatis s. truncatis triangularibus acuminatis, margine scabris; floribus in axillis foliorum glomeratis s. in spicas foliaceas paucas flores dispositis; floribus 8-andris, stigmatibus 3 sessilibus; laciniis perigonii fructiferi 3 exterioribus cristato-alatis, alis crenato incisis; nucibus parvis, trigonis, nitidis.

Margin of woods and thickets near Industry; July. — Near Polygonum scandens and P. dumetorum, from which it is distinguished by the hardly cordate but more truncate and triangular leaves; by the laciniate winglike carinae of the 3 exterior perigonial segments and by the much smaller nuts, which are just 1 line in length, those of P. scandens are 1/3 line and those of P. dumetorum full 2 lines long; in this last the wings are very broad, undulate and entire; in P. scandens they are somewhat crenate but frequently not all three developped, and in some flowers entirely wanting. P. Convolvulus is easily distinguished from all three by the want of ~~alae~~ wings and by the opaque nuts. —

297. Eriorheon Lindheimeri n. sp.

Eriorheon n. gen. Involucrum multiflorum campanulatum 5-dentatum, flores hermaphroditi intra involucrum plurimi, pedicellati, pedicellis cum bracteolis mixtis; perigonium coloratum (album) membranaceum profunde sexfidum, laciniis erectis exterioribus reniformibus latissimis interioribus lineari spathulatis; stamina subinclusa 6 exterioribus cum perigonii laciniis alternantia 3 interiora laciniis interioribus opposita; filamenta filiformia, antherae ovatae; ovarium trigonum, stylis 3 filiformes ~~cum stam~~ petalis externis opposita, stigmatibus obtusis; achenium teres, rostratum, perigonio emarcido stipatum, embryo intra albumen farinaceum rectus, cotyledonibus orbiculatis planis diagonaliter per albumen productis, radicula elongata supera.

Herba texana annua lanuginoso-tomentosa foliis caulinis ovato-lanceolatis semiamplexicaulibus undulatis, subtus candidis; pedunculis terminalibus singulis di-trichotomo-ramosis, involucris corymbosis, floribus paris albidis. Nomen plantam lanatam, Alsio affinem refert.

Eriorheon Lindheimeri n. sp. Sandy prairies near Industry, July to October. An erect mostly simple annual 2 to 2½ feet high; leaves half clasping ovato-lanceolate, acutish, undulate and somewhat denticulate, ~~the~~ floccose above densely white tomentose beneath, peduncle terminal, elongated, corymb mostly twice 3-parted, much divided; involucres campanulate

3) 5-toothed, woolly inside and outside, many flowered, flowers exsert on articulate pedicells, intermixed with woolly bracts. The external segments of the perigonium much like the interior ones of Rumex or Rheum, larger and reniform. The 3 interior ones linear spathulate, all woolly inside at base, glabrous outside; filaments glabrous, about the length of the perigon; ovary glabrous triangular, with 3 styles, stigmata obtuse, but not capitate. Near Eriogonum but distinguished by its annual growth, by the difference of the external and internal segments of the perigonium which are nearly equal in Eriogonum, by the obtuse, not capitate stigmata, by the roundish conic not 3angular achenium and the farinaceous albumen.

298. Aristolochia longiflora n. sp. radice filiformi elongata, caule humili, adscendente, ramoso, foliis longe linearibus, subsessilibus, utrinque acutissimis, glabris, floribus axillaribus, pedunculatis, basi unibracteatis, extus pubescentibus, limbo longissimo ligulato.

flower

Shady grassy spots near the Willbrook. April to July. — A remarkable plant very different from any other northamerican species. Root very long and simple, aromatic, stems several branching from the base, weak ascending, 6 inches high, branching at base; leaves 3 to 5 inches long, 1 to 3 lines ~~long~~ wide; flowers axillary along the stem; peduncles 3 to 6 lines long; bract linear lanceolate at the base of the peduncle and ovary; perigonium 3 to 5 inches long, pubescent outside, limb ligulate cordate at base, narrowed upwards, linear, and twice as long as the tube, capsule smooth.

299. Aristolochia reticulata n. sp. hirta, radice ~~retorta~~ fasciculata, caule humili, erecto; foliis breviter petiolatis, ovato-cordatis, obtusis, subtus prominenter venoso-reticulatis, racemis bracteatis paucifloris, subradicalibus, prostratis; floribus hirsutissimis, pedicellatis, ovario convolutato tubo incurvo ad faucem constricto, limbo bilabiato.

In thickets and high grass near Cat spring, west of the Brazos; May & June. —

Near A. Serpentaria, root similar, but fibres coarser, of similar taste, also used indiscriminately as a "snake root" (Lindheimer); stems 6 to 8 inches high, one or a few from the same root, hairy; leaves ovate or elliptical deeply cordate at base, obtuse, of a firm texture, strongly reticulated beneath, hairy on the veins, about 2 inches long and 1 or 1¼ wide; racemes in the axills of the lowest scaly leaves at the base of the stem, with from one to two or 3 flowers, prostrate on the ground very hairy; flowers pedicelled, about 2 lines long, tube ventricose at base, narrowed and curved upwards, much constricted at the throat, expanding into an open dark purple limb with two nearly equal lobes.

300. Euphorbia parvifolia n. sp. annua, prostrata, glabra, glauca, foliis oppositis ovato orbiculatis, obtusissimis, integris, basi obliqua obtusis s. subcordatis, petiolis brevibus, stipulis connatis triangularibus integris s. margine fimbriatis et apice bifidis, pedunculis foliisque multo-superantibus in dichotomia ramorum singulis s. in ramulis foliosis alternantibus glomeratis, involucri glandulis anguste petaloideo marginatis, seminibus e cinereo-rubellis, dorsato-oblongis obtuse angulatis, laevibus.

In clayey soil near Industry, July to Sept. — Also along the Mississippi, Ohio and Missouri rivers in heavy black, also in sandy soil. — The smallest of our procumbent Euphorbiae; leaves from ½ to 2 and 3 lines long, seed about ½ line long. Nearest to Elliott's E. cordifolia (which we have also received from Texas) but

4/ much smaller in all parts, corolla more crowded; petaloid appendages small, transversely oval, and emarginate; stipules nearly entire

Mixed with this were a few specimens of another species, which I believe is undescribed. I have found the same in Prof. Shorts Collection, sent from the Red river by Dr Hale under the name E. rotundifolia, but as there is already another E. rotundifolia described and as the leaves are generally more oblong than round I have changed the name and call it:

E. oblongifolia n. sp. annua, caulibus prostratis, pilis crispis pubescentibus, foliis oppositis, orbiculato-s. ovato-oblongis, obtusis, versus apicem serrulatis, basi obliqua truncatis, s. subcordatis supra glabris subtus pubendis, breviter petiolatis, stipulis minutis, pilosis; involucris pseudo-axillaribus, singulis, s. plerumque in ramulo foliioso glomeratis, pilosis; glandulis transversim ovatis; capsula acutangula pilosa, seminibus e cinereo-rubellis oblongo-linearibus, acute angulatis, profunde transversim rugosis.

Clayey soil near Industry, Texas, also on Red river (Dr Hale in the Short) fl. August.

Near E. depressa Torr but seeds much larger sharper angled and deeply rugose.

Besides these and the following I know of no more Euphorbias with opposite stipulate leaves in the U. States, which are partly difficult to distinguish, but their seeds furnish some very good characters. But still more difficult if not entirely impossible it is to identify the species meant by the different authors. Of those described I know for certain only the common E. hypericifolia (though it may be the E. maculata of some) and E. polygonifolia (but Michaux's must be different). Of E. depressa Torr I have an original specimen and think it must be the Ficusifolia of some and the maculata of other authors. With E. maculata, if a good species I am not acquainted and should like much to have a specimen (send me a small branch with ripe capsules!) in a letter). I have seen specimens from New Jersey, called so, but they were apparently E. hypericifolia with smaller more hairy leaves. — All may be divided into 2 classes 1, with smooth, reddish gray seeds and entire, glabrous leaves 2, with uneven, tuberculate, rugose or foveolate reddish gray or blackish seeds, and serrated glabrous or hairy leaves. All these are annual; but there is one species (collected by Dr Mersch towards the rocky Mts), which I call E. deltoidea which is apparently perennial has smooth, entire leaves, but not smooth, but foveolate seeds, therefore different from all the others in many respects. — What is E. particularoides?

I will here give a list with short characters of all E. stipulatae of N. America, known to me.

Euphorbiae stipulatae

1. Semina foveolata, rugosa s. tuberculosa (foliis plerumque serratis)

a. semina nigricantia

1. E. hypericifolia Lin semina obovata, obtusius angulata, transversim rugulosa; foliis glabris ovalis. Everywhere

2. E. maculata ? sem. oblongis, acute angulatis, transversim rugulosis, foliis subtus pilosis. N. Jersey

b. semina e cinereo rubella

α. foliis serratis, caulibus pubescentibus.

3. E. depressa Torr sem. transversim foveolatis, fol. oblongo-linearibus. — Everywhere

4. E. hemistorta n. sp. sem. minutim tuberculatis, fol. ovatis. On the Ohio & Mississippi.

5. E. oblongifolia n. sp. sem. transversim rugosis, fol. ovato oblongis, Louisiana, Texas.

β. foliis serratis, caulibus glaberrimis.

6. E. laterialis n. sp. sem. oblongis, transversim foveolatis; foliis ovato oblongis, stipulis setaceo-multifidis. Upper Missouri, Geyer.

7. E. angustior n. sp. sem. oblongo linearibus, transversim foveolatis; fol. linearibus stipulis subtripartitis. Upper Missouri, Geyer.

γ. foliis integris glaberrimis.

8. E. deltoidea n. sp. sem. transversim foveolatis, foliis triangularibus acutis. Upper Missouri, Dr Mersch.

2. Semina laevia (e cinereo-rubella, foliis integris glaberrimis)

9. E. parvifolia n. sp. fol. ovato-orbiculatis, flores et sem. minimis, stipulis subintegris, subcornutis, Missouri, Arkansas, Texas

10. E. cordifolia Ell fol. cordato-ovatis, fl. conspicuis, sem. majoribus, stipulis setaceo-multifidis, Louisiana, Texas

11. E. Geyeri n. sp. fol. oblongis retusis, invol. petaloideis, sem. majoribus, stipul. setaceo multifidis. Arkansas & upper Missouri, Geyer.

(= E. polygonifolia Torr.: Fremont report ?)

12. E. polygonifolia Lin fol. oblongo linearibus obtusis; invol. glandulosis, sem. maximis; stipul. integris, caulis. Eastern coast, and coasts of Lake Erie.

13. E. gracillima n. sp. fol. linearibus; invol. longe pedicellatis, singulis; petaloideis; sem. majoribus stipulis subintegris. Texas.

5/ 301. Euphorbia gracillima ** annua, erecto-patula, glabra, foliis oppositis, linearibus, integris, obtusis, mucronatis, basi subobliqua acutis, breviter petiolatis, stipulis e basi lata subulatis, distinctis, subintegris; pedicellis petiolos longe superantibus, in dichotomia ramorum singulis; appendicibus involucri petaloideis plerumque 4, ovatis subacutis, inaequalibus; seminibus obovato-subglobosis, e rubello cinereis, laevibus.

Sandy slaves, especially about fresh anthills in prairies and open woods near Cadiz, Ky, also on sandstone rocks there. H. June to August. Large bushes, often 6 feet in circumference and 2 or 2½ feet high; smaller plants are frequently erect. A very slender plant somewhat with the habit of a large galium, with conspicuous white flowers and long linear distant leaves, which are 8 to 10 lines long and less than a line wide; pedunctes 2 to 4 lines long.

302. Euphorbia arkansana n.sp. annua, erecta, glabra, caulibus a basi ramosis; foliis sparsis, v. spathulato-obovatis, inferioribus petiolatis, superioribus sessilibus basi angustatis versus apicem serrulatis, acuiusculis; umbellis trichotomis, bis dichotomis, omnibus subcordato-ovatis, mucronatis, serratis; glandulis involucri orbiculatis, capsulis vernicosis, seminibus rugoso-reticulatis.

Roadsides in prairies, from Houston to the Colorado, April to July, also near Fort Gibson in Arkansas (E.) — An annual 8 to 12 inches high, branching from the base. involucral glands orange coloured, seeds deep brown.

303. Euphorbia glaucula n.sp. annua caule erecto infra glabro, supra piloso, ramulis villosis; foliis sessilibus ovatis v. obovatis, cuspidatis, integris, glabris; umbellae trifidae ramis trichotomis v. dichotomis; bracteis lanceolatis, acuminatis, margine decolorato crispis; glandulis involucri villosi petaloideis orbiculatis; capsulis lanatis, seminibus tuberculato-rugosis.

In the heavy bottom lands of the Colorado river, August. — Stems 3 to 5 feet high. Near E. bicolor (No 174) but distinguished by the broader smooth leaves, by the denser umbells, much shorter bracts, which are glaucous and not the white margin wavy; but principally (and this proves it to be a distinct species) by the smaller and very rough tuberculated and rugose seeds. those of E. bicolor are larger and the wrinkles on them are slight and indistinct. E. marginata Pursh is distinguished by the broader leaves, oval obtuse and mucronate bracts (and the seed? I have not seen seed). — Name from the white and crisp margin of the bracts.

304. The examination of all these Euphorbiae has led me to examine all that I could lay hold on. those with lunate crenulated glands of the involucrum appear to be not well known, as I find them called every where E. peplus in books & Herbaria, but the European peplus is something quite different.

Euphorbiae glandulis involucri lunatis (capsulis laevibus, seminibus exsculptis, umbellis trifidis)

a. Sem. facie interiore foveolato-4-punctatis, exteriore sublaevibus.

1 Euph. cuneifolia n.sp. annua, sem. e cinereo-fuscis; fol. cuneatis, retusis v. emarginatis, sem. 6/10 lin longis; Texas (Lindh.) Georgia (Boykin) ©

b. Sem. facie interiore 2-sulcatis, exteriore foveolato-punctatis.

2. E. Peplus L. annua, sem. cinereis, 7/10 lin longis; capsulae angulis 2-alatis, fol. obsoletis, obovatis, obtusissimis. — Europe.

c. Sem. facie ext. et int. undique foveolato-punctatis.

+. fol. viridissima, inferioribus petiolatis.

3. E. commutata n. sp. (E. peplus Auct. am. ex parte) biennis (v. perennis?) multicaulis, ad ramos (Kentucky, Missouri) fol. infer. petiolatis, sup. sessilibus, spathulatis, obtus. transversis, sem. cinereis 9/10 lin long.

4. E. controversa n.sp. (E. peplus Auct. amer. ex parte) annua caule basi simplice, mox fol. omnibus spathulatis petiolatis; sem. cinerea 1 lin longis — Ohio (Lapham) Perhaps var. of the last.

6) ++ foliis glaucis, semilibus

5. Euph. Mershii n. sp. perennis, multicaulis, adscendens, — cum. cinereis 1 3/10 lin longis, with fork of Platte River, Dr Mersch.

304. Pilinophytum capitatum Klotzsch — Low prairies near the Colorado river, Sept & Octo. No. 171. Croton Lindheimerii is the second species of Pilinophytum!

305. Hendecandra tuberculata n. sp. annua dioica undique stellato-tomentosa, ramosissima foliis lineari-lanceolatis utrinque obtusis supra viroscentibus subtus incanis petiolatis exstipulatis; fl. masculis pedicellatis in capitulos pedicellatos spicam interruptam formantes congestis, terminalibus, axillaribusque; calyce 5-partito, corolla nulla, disco squamis 5 sepalis oppositis instructo. staminibus 11-12. fl. foemineis singulis s. ternis terminalibus vel in dichotomia ramorum bracteis suffultis; calyce 5-lobo aequali ovario disco orbiculato insidente; stylis 3 ter bifidis; stigmatibus sub 24; capsula stellato-tomentosa tuberculosa.

Prairies in the Colorado bottom, August. Male & female plant generally intermixed and covering large patches of ground. — An annual, about 3 feet high. leaves ~~alone and~~ on both sides stellate pubescent but below much denser and whitish 1½ to 2 inches long and 3 to 5 lines wide, length of petiole equal to the width of the leaf. stipules from 20 to 24. capsules covered with tubercules, on which the stellated pubescence is more crowded which gives them a very curious appearance. Seeds nearly orbicular compressed about 1 8/16 lines in diameter. — Near Hendecandra multiflora Torr. in Fremont's report 1843. pag 92 but apparently well distinguished; of this I have also only a male specimen coll. by Dr Mersch 1843, on the North fork of the Platte. its leaves are smooth above, and the entire pubescence is thinner; male flowers in a dense compound spike, single flowers nearly twice as large as in H. tuberculata and only with 7 to 8 stamina on an orbicular, not 5 lobed disc. — Is Drummond's plant, coll III, 266, cited by Torry equal to ours or to the Missouri plant? —

No. 172 Cr. glandulosus is Gerscelonia glandulosa Klotzsch, but the calyx of the male flowers 5 not 4 parted; with 9 to 10 not 8 stamina.

Engelmannia Klotzsch has calyx of ♂ fl. 3 not 5 parted, 3, not 5 petals, 3 to 6, not 5 stamina; cal. of ♀ fl. 4 to 6 parted, not 5 parted, (with Croton).

What new Genus does Croton maritimum belong to? It is near Hendecandra but distinguished by not being divicious etc; it has 12 stam. no petals, ♀ calyx 5 or 6 parted.

Cr. argyranthemum appears to be a true Croton but ovary on an orbicular, not 5 glandular disc.

178. Jatropha stim. is Cnidoscolus Pohl (Endlicher).

306. Tragocroton humilis n. sp. caulibus plumbeis adscendentibus s. prostratis a basi ramosis, foliis ovato-lanceolatis, brevissime petiolatis, adpresse pilosis, ~~sub~~ demum supra glabratis, capitulis florum axillaribus, foliis multo brevioribus, paucifloris, flore foemineo ad basin unico, petalis in fl. masculo calycem paulo superantibus, lanceolatis, in fl. foemineo subulatis, glandulis disci brevioribus, capsulis adpresse pilosis, seminibus tuberculoso-rugosis.

In hard clayey soil west of the Brazos, from March to August. — The smallest of the 3 species, ~~known to us~~ (for the 2 others and the generic character see No 175.) known to us, about 6 inches high, easily distinguished by the small

7) leaves (1 to 1½ inches long, and nearly ½ inch wide), glomerate flowers and small seeds which are hardly more than one line in diameter, and are curiously tuberculate and rugose and under a glass striate. In each little head are one female and about 4 male flowers; filaments connected into a column, upper part free, 4 or 5 form a lower, and 2 or 3 an upper verticill.

307. Tragia brevispica n. sp. multicaulis, ramosa, procumbens, adscendens ramis apice flexuosis, s. volubilibus; foliis e basi cordata s. truncata lanceolato-linearibus, irregulariter acute dentatis, parce pilosis, petiolatis; capitulis foliis opposita multo brevioribus; fl. foemineo ad basin unico, masculis paucis; capsulis hispidulis.

In black clayey soil on the prairies west of the Brazos. May to July. In this as in all other Tragiae the spikes terminate the branches or are opposite the leaves; sometimes they appear to come out of the stem above the insertion of the leaf or in other words their peduncle is coalescent with the stem. — This species is nearly related to T. urticifolia but distinguished by the ~~prostrate~~ procumbent stems, which often form bushes of 2 or 3 feet diameter, and are frequently twisted and climbing at their extremities; by the smaller and much narrower leaves (2¼ to 2 inches long and 2 to 6 lines wide) but especially by the short spikes and small flowers and fruit, which is less hispid.

308. Forestiera acuminata Poir. On the banks of the Brazos near San Felipe, March. I have found the same plant on the Wabash, Illinois, Neosho and Arkansas rivers.

NB. Among Lindheimers former collections is a plant evidently near Forestiera but distinct: a pubescent shrub with opposite leaves, similar inflorescence, and flowering in summer; in the axills of the amentaceous scales are 2 to 4 staminate male fl. and sometimes female and hermaphrodite fl. with them; I have examined fertile fl. without stamens and with 2 or 3 stamens; ovary 2 cavitary, with 2 styles. Do you know the plant?

Ulmus fl. the second time in September, leaves small = U. alata, but obtuse ~~segmen~~ perigon divided to the base segments 8 linear, ovary villous; — distinguished from all other N. A. Ulmi by the narrow segments of ovary. —

309. Quercus cinerea Mich. Sandy hilly soil forming groves in the prairies west of the Brazos; grows together with Q. obtusiloba; fl. in April. — The earliest flowering species in Texas; never a large tree, often crooked very much branched, unsightly except in early spring when the silvery gray leaves with the reddish tops form a pleasing contrast with the fresh green of the prairies.

Numbers of specimens sent you, and the true numbers here in this Catalogue and on the printed labels:

sent you	now	sent you	now										
215	215	228	231	241	250	254	273	268	285	282	309	295	272
216	216	229	234	242	251	255	274	269	289	~~283~~		296	259
[illegible]	217	230	235	243	255	256	275	270	290	~~284~~		297	232
217	218	231	236	244	256	257	276	271	292	~~285~~		298	304
218	219	232	237	245	257	258	278	272	293	~~286~~		299	305
219	220	233	238	246	258	259	279	273	295	~~287~~		300	222
220	221	234	240	247	264	261	281	274	298	~~288~~		301	252
221	223	235	241	248	265	262	284	275	299	~~289~~		302	266
222	224	236	243	249	267	263	283	276	308	~~290~~		303	233
223	225	237	245	250	269	264	282	277	307	291	303	305	242
224	227	238	246	251	268	265	287	278	306	292	253	306	239
225	228	239	247	252	270	266	286	279	300	293	254	307	291
226	229	240	248	253	271	267	288	280	301	294	226	308	297
227	230							281	302				

309	296
310	294
311	262
312	260 & 263
313	261
314	244

8.

Dear Doctor

Here comes the fourth big letter, and soon the fifth and last will make its appearance. I leave it with you whether you will put some about the Euphorbia, contained in this letter in a note or leave it out. You have again a new genus here, but one which probably is known amongst Drummond plants, as it was found near San Felipe, Drummonds principal station. Is it described? As soon as I am done with the plants I shall distribute them into sets and send them on. — The pulp of Gleditschia as well as of Algarobia is probably derived from the parenchyma but in A the inner coat of the angul forms separate cells. — I wait for milder weather to send you the Cactus and some seeds for you and Hooker and also some plants. I am afraid your specimen of Echinocactus gyracanthus will be destroyed

Dr Asa Gray
Care of Prof. Lovell
Cambridge
Mass

by rotting, still I will send it on, as a specimen and also as it perhaps can be saved by cutting. After the end of this month I hope I can safely send them. Forward Hookers part soon, if you can. I am sorry to trouble you so much, as I know that you are very busy, but administering plants must be done and Dr. Torrey needs now. Here branches of Euphorbia parviflora, oblongifolia and Geyeri.

Very truly yours

G Engelmann

St Louis March 29th 1845

My dear Doctor

Here I send you the last part of my annotations to Lindheimer's plants and my labour is done so far; I shall now distribute the plants in sets and send them off; those for the North and east and for England I will send to New York, subject to your orders; however I will apprize you of all that, when they are actually ready to be sent. — Spring is now so far advanced that I believe I run no more risk in sending the Cactus, and I will pack and ship them today or to morrow; your specimen of Echinocactus gyracanthus is far gone, but I still send it; perhaps you may save it, but cutting it out and grafting the healthy part on an other Cactus, but if not you want it at least to see and examine the plant. — The largest specimen I keep here, it is so far in a good condition. — Echinocactus setispinus is very much shrivelled and can perhaps not be saved but I send it on the same account. — You get also a few more seeds, which I have partly picked from among the plants; also a tubers of Oxalis Lindheimeri. In your box will be included one for Hooker with notes, bulbs and seeds; charge him with his part of the expenses and forward it, if possible with the steamer of May 1st perhaps it would be well for you to open and examine his box. — I shall also put in your box some plants — but whether they will do well with the Cactus I doubt; however as they are partly of importance from Lindheimer's Catalogue, I send them now. — At Vesiriana No. 217 I include in this letter, and send better specimens in the box. — I give you now a good deal of trouble again but hope, that after the end of this month, you shall have a little more leisure to finish this; — have it printed as soon as possible! I expect, not to trouble you for a long time to come, not before next winter; in the mean time I long to examine plants again in their native places — and hope to be able to make some

distant excursions, this season. When do you expect to continue the flora? — Any thing of the 9th vol of Decandolle?

Very truly yours

George Engelmann

P.S. Wiley & Putnam write me, that they have sent no sets of Gray's Plants to England, having received no orders from there. — Still it would be well to do it; perhaps it will be proper, when you write to them, please mention it; as Hooker has asked for them, and as I have wrote him, that they would be sent to W. & P. in London.

Prof. Asa Gray
Cambridge
Mass

St Louis May 13th 1845

My dear Doctor.

After having inundated you with long and frequent letters, I intended to give you a respite of some months, and if possible, wait for the new postoffice law, but I have to write you again!

About 3 or 4 weeks ago I have sent you a box containing Cactus and seeds for yourself and another smaller box with similar contents for Dr Hooker. I hope they are all safe in your hands, and you have sent of the latter. I find that the Cactus grow easily, all mine are doing well. To make an experiment I took the other day a joint of the Opuntia fragilis for the Herbarium and put it in the ground, and already it is growing! But let me report regularly:

1. Opuntia putescens (or fragilis?) has nearly terete joints (angular only in shriveled or dry specimens, leaves on the young shoots terete, mucronate, 2 to 2½ lines long, at first with loose woolly hairs afterwards with spines in the axills.

2. Opuntia vulgaris? is an erect plant, grows several feet high; joints obovate at base cuneate, leaves terete, subulate, mucronate, about 6 lines long; in the axills at first a brownish wool, then small prickles, and sometimes long spines; I recollect to have seen an erect Opuntia near Natchitoches, the same? How it differs from our Missouri plant I do not know well yet; ours is prostrate, the joints orbicular obovate, leaves about the same, but more spiny; specimens from Wisconsin, which are growing in a garden here, are entirely similar but less spiny. It appears to differ from the Texas plant only in the prostrate growth and the more orbicular joints. Fruit dark brown red and edible. — O. missouriensis I do not know; is it also prostrate?

3. O. missouriensis? probably rather O. vulgaris, but very spiny; I have a dry specimen, and can not say anything more about it.

4. Mammillaria similis. I have to endorse every thing said before by me; ~~except that~~ but the leaves do sometimes appear slightly sulcate, it is growing freely, cespitose, leaves (or tubercules) spiny, young ones also with a white wool, spines pubescent! axills smooth.

5. Mammillaria sulcata perhaps M. viviparam! but as I have never seen this plant nor a complete description I can not say any thing about it. — Leaves sulcate, young ones also woolly, but older ones only spiny, spines radiating and only in the fructiferous branches or trunks a curved central spine appears! Perhaps only flowering once! It appears as if those parts of a caespes that have flowered, do not continue to vegetate but the younger ones are doing well! Many of the leaves are bringing forth new sprouts at the furrow, below the top.

6. Echinocactus setispinus only one specimen is growing, and will probably bloom, all others and so probably all that I have sent away, were too much dried up. it is no doubt an Echinocactus; the young bundles of spines come from a yellowish spot which is ~~unarmed~~ covered with a very short wool, which disappears afterwards.

7. Echinocactus? gyracanthus. My specimen is growing beautifully and will get at least 5 or six flowers. Is it perhaps a Melocactus?! There is certainly no spadix, but the top of the plant which is rather depressed is very woolly and out of this wool in the axills of the young branches of spines (of this years growth) not from the clusters themselves! which I suspect is never the case; the flowers come

always from above or inside the clusters of spines which represent the top of the leaf; only in Opuntia they are themselves axillary productions. — The flower buds are yet small, but thick and will become large apparently.

8. Cereus caespitosus. My specimen is growing finely, the centre or top becomes very white with wool; the spines are at first erect; gradually the areolae detach themselves and the spines become recurved. Flowers apparently large; my specimen has a few buds already more than half an inch long — and thick and very woolly, but originating in the axills of the old leaves (clusters of spines), not of those of this years growth. —

If you like I will figure all those cactus for your journal, which will bloom, if they are need. —

Do you want shoots of our common Opuntia, and of the Texan erect one? if so, I will send them next winter. But from you I want if possible small living specimens of the Missouri — and the rectiadl Mam. simplex of M. Wispian if different from my plant and O. fragilis, if different. — You would oblige me very much by procuring — and sending them; I am quite interested in the culture of these interesting plants. I should like to get all for the U.S., Texas & O. California. Have you seen Op. missouri cultivated? I should like to have that too. I hope also regret if some travellers will not [illegible] me such cactus, the [illegible] have now finished the distribution of the Texas plants and shall send to morrow a box directed to you, containing 4 package, destined for Hooker, one small parcel also for him (you will have [illegible]) one package for Mr Greene and four more (just filling a vacant space in the box) No 19. 20. 21. 22. which I leave with you to dispose if any more subscribers should come forward here or in England. —

As to the charges, you have either to divide them between the persons to whom the packages are directed, or to charge Lindheimer (me) with them, and pay yourself by part of Mr Greene's remittance. — Do as you think proper.

My Asclepias Lindh. and many of the Texan seeds are coming well, and I hope to see many of those rare or beautiful plants in flower. Senecio ampullaceus, Sida Lindhei, Buddleia flammeus and others are coming. Malvaviscus has been already in bloom last fall, and is sprouting luxuriantly now. — — I must raise every thing in flowerpots, if I had the smallest piece of garden at my disposal, I would cultivate our Asters, Helianthus &c.

I hope you have by this time the Catalogue and description in print, and can send copies of it along with the sets.

Please to send Hooker several spare copies; also to such other persons as you think proper.

Send 20 copies to Prof. Braun, Carlsruhe, Germany (best by Bremen, Hamburg, Antwerp or Rotterdam ship. the two first are the best.) I send to Braun 10 sets which have been ordered and 3 spare ones.

Please send also per mail one to Dr S. B. Mead, Augusta Hancock Co Illinois, and one to Prof C. W. Short Louisville Ky and one to Wm S. Sullivant Esq. Columbus Ohio

Please to have also besides all these about 50 extra copies printed for me, and make payment for them from Mr Greene's money. —

You say you will look through Mr G's package; please tell me all you have to remark about the plants, the paper the labels the mode of packing etc. I do every thing as I think best but having no experience in these things, much may be altered advantageously. — How do Drummond specimens compare with Lindheimer's? ... Those of last year suffered much from moisture. Perhaps they ought also to be more pressed. But in travelling and in putting up plants in a cart it is not easy to obtain the neatness required by a closet botanist. The specimens are at least as complete as possible; — and I think the small ones as numerous as necessary. — However tell me all about it. —

Has Greene any Charme for Braun?

Braun writes me that he has got many Cacti etc from different European Herbaria for me, which I expect in 4 or 6 weeks.

You ask me why Lindheimer has not done much more. He is rather slow, besides he has had misfortunes; and then travelling is and was for the last 3 or 4 years very unsafe in western Texas. He has made a start now under the protection of a large german colony; but I am afraid that the colony will be broken up by internal dissensions or external difficulties; however

Lindheimer will do his best. — I think I have roused him sufficiently. — My last letters from him are dated January 22d.

I expect there will be no difficulty with the numbers; I have myself compared every thing again carefully. — There is a great deal of tedious manual labour in these things, ~~more than~~ which takes more time than I should like to bestow on it but what is to be done. I can not let any body else do it! —

Euphorbia bicolor as well as E. ovalolanea must be different from E. marginata; the seeds are different! — On the seeds and capsules we must place our reliance. — Euphorbiae. it is a better character than any other. — Do you know any horned Euphorbia here, except Peplus; well, I have now three (incol. Cornutus) 1. One from Missouri, Kentucky etc (also E. Peplus) 2, one from Georgia & Texas 3, one from the Rocky Mts; all very different from Peplus and from one another!

I have to leave it entirely to you, of course, how to alter or abridge my account of the Texas plants. I have described a number which no doubt, are known already where therefore a mere mention of name, locality and date will be sufficient. But you will also find a number of remarks, partly derived from Lindheimer's letters, partly from the investigation of a large number of specimens which I think would be valuable to retain, if correct.

As to the genera of Acanthaceae, I am sorry that you should have all that trouble; but I think it has to be gone through with only with a few plants; with most of them I think the old genera may be retained till further investigation; we may still call Ruellia strepens and R. oblongifolia by their old well known names and leave to a more critical work the investigation whether Calophanes and Dicyanda are good genera or not. — I hope you will not exclude in your condensation the notice of the new Cassia and some other new Texan plants not comprised within text (and the sets), and which I should like to put into notes.

Fremont has not been here yet; he is expected every day. Pity that he or Col Abert should be prevented (by some certainly not very noble reason) from sending some naturalist along with the expedition. However if Geyer & Leiders do nothing (I have not heard any thing of them) we have now a very botanist for New York, Mr Halsted going there, who is, if not experienced, at least full of zeal; he travels to Oregon & California with some other naturalists. – Besides this I have requested and instructed a young physician from here, Dr Gildea, who is going to settle in California to collect plants, and he has promised to discover a Gildea! —

But I have troubled you too long already. Please to send me one copy of the Catalogue etc by mail and the others by some other cheap opportunity; the first one as soon as possible. –

If I have nothing particular to communicate you will not hear from me again before the first of July!! — A fine day will that be for all correspondents!

Yours very truly

G Engelmann

Is it possible to get a copy of your H. A. Gramineae? I have nothing about this family and can hardly help myself. – Where can it be got?

Messrs
Cambridge, Mass
Jas Alex Gray
N.Y.
Living.
MAY 1 1

St Louis June 9th 1845

My dear Doctor,

After your long silence I was much pleased to receive your letter of May 17 and also learn the safe arrival of the Cactus! I hope soon to learn also the arrival of the box of plants, which I sent by New Orleans. — Those sets of Lindheimer destined for Short, Sullivant etc, came long ~~ago~~ since in their hands, they wait for your catalogue.

I write you sooner than I intended principally because I see for your letter that there is a little misunderstanding in the number of the plants. The plants sent to you were numbered so: 3. Clematis (Pitcheri) 4 Cl. cylind. 5, Cl. reticulata — afterwards in the printed labels I changed the numbers as I wrote you 1. 2. 3 Drummondi 4 Cl. cyl. and under 5 I put both Cl. retic & Pitcheri taking them for the same plant, so that some sets may contain one some the other and a few perhaps both — which, if still time please to notice.

Is 9 actually Crist. crosa?

Your notice about Desmanthus & Aciria later I do not understand or can not read.

Gaura Lindheimeri will stand there, as it is distinct from the true tripetala; I have among 50 specimens never found one with 3 parted flowers, it grows only near Houston on the Brazos & farther west I have never found it.

Prosopis Lindh. from Galveston appears to me quite distinct from P. glandulosa which I have from the Brazos; I believe I have carefully noted the differences.

My Cactus are all growing, 7 well defined species and most of them well distinguished from any which I had described. 3 have been in bloom and Echinocactus setispinus will be in one or 2 weeks! But I found it impossible, as I had intended to draw and paint them. I had no leisure and then the tints were so delicate and beautiful, that I could never have done them justice.

Opuntia puberscens may be identical with fragilis; my specimens are small and will not flower yet. — The diagnosis

must be corrected: axillis teretibus; they are angular only when withered!

2, I have growing, but not in flower; no remarks to make

3, only in the herbarium.

4, Mammillaria similis caespitosa, axillis tuberculorum juniorum paulo tomentosis; tuberculis ovatis, supra leviter sulcatis, sulco versus basin subtomentoso, etc. — No indication of flowers yet. — Except in the fruit, very distinct from simplex; but perhaps not from Nuttall's simplex?

5. M. sulcata caespitosa, tuberculis ovatis, sulco sub inde versus apicem prolifero superne notatis, apice spinifero, spinis, rectis radiantibus cinereis et tomento albido deciduo. in plantis adultis (floriferis) spina centrali (majore) subrecurva auctis; floribus centralibus fasciculatis, e tomento ortis, gilvescentibus; tubo brevi, sepalis lanceolatis, acuminatis, e viridi flavescentibus, margine integris; petalis longioribus lanceolatis aristato-acuminatis, versus apicem ciliato-denticulatis, sordide flavis, intus ad basin rubicundis; staminibus inclusis, filamentis rubellis; stylo supra stamina exserto, stigmate flavo 7-10 partito, baccis oblongis, floris rudimentis coronatis, virescentibus.

Flowers open for 2 days only in sunshine 20 to 25 lines long, and when fully open 2 to 2½ inches in diameter; sepals greenish, entire, innermost petaloid a little denticulate, 20 to 25 in number. petals 30-36 dirty yellow with a (much) reddish base. — Forming with Nuttall's viviparus perhaps a peculiar section: fl. centralibus, distinct for M. vivip. by the spines, radiate on the sterile shoots and with a stouter central spur on the fertile ones, by the larger yellow flowers, entire sepals and denticulate petals. — I at first thought ~~6. Echinocactus stipinus the apparently so~~ the fertile shoots would bloom only once. But I see that in some new tubercles show themselves in the central cavity (left by the falling away of the fruit.

6. Echinocactus setispinus the bunches of spines of this years growth have in their axills, if I may say so, a yellowish tomentose spot which gradually elevates itself a a small smooth flowerbud with imbricated only sepals makes its appearance. sep, not crowded as in the next

7. Echinocactus gyracanthus (we should name it perhaps Lindheimeri) — spinis exterioribus inaequalibus, mediantibus subrectis, etc. — floribus in vertice depresso tomentoso, ex axillis fasciculorum annuorum (of this year's growth, or is that rather: "hodiernorum") provenientibus, confertissimis, ~~ab ipso tomento laxo~~, sepalis in tubum brevem infundibuliformem tomento canescens coalitis, lanceolatis, spinoso-aristatis, interioribus margine fimbriatis; petalis lineari-oblongis apice bifidis, aristatis, margine fimbriato laceris; basi ex auranticaro-scarlatinis versus apicem albidis nitentibus, nervo medio violaceo in aristam violaceam desinente; staminibus numerosissimis aequalibus e toto tubo ortis inclusis; filamentis auranticaris; stylo compresso supra stamina exserto; stigmate irregulariter 11 to 13 fido carneo.

Flowers about 20 to 24 lines long, 30 lines in diameter, in my specimen 13 in number, crowded in the woolly centre and in the axills of the bunches of spines of this years growth, frequently compressed and obstructed in their growth by some spines of last year; Calyx covered by a thick loose wool; sepals 80 to 100; petals 40 to 50 of the most delicate tint, at base scarlet, verging to orange, from which a pale purple midrib extends to an herbaceous bristle of the same colour; upper part of the petals of the most delicate pearly or satin like shining white, with feathery margins. — In flower full 3 days; open only in bright sunshine.

8 Cereus caespitosus — — aculeis — — ex areola lanceolata albo tomentosa demum glabrata radiatis, — demum recurvis — — floribus ex axillis tuberculorum biennium (of last year's growth) lateralibus, ovario oblongo, tuberculis (sepalis exterioribus) apice e lana villosa spinigenis stipato; sepalis plurimis, apice spinis setiformibus villoque coronatis, virescentibus, intimis acuminato-aristatis, obovatis, integris; petalis plurimis (violaceis) versus apicem ciliato-denticulatis, exterioribus abrupte acuminatis, interioribus obtusis, cuspidatis; staminibus inclusis, filamentis basi rubellis, apice flavis. stylo supra stamina exserto, stigmate viridi infundibuliformi; 13 partito

flower about 27 lines long, 24 lines wide when fully open; sepals (which are dente to the ovary) 40 to 50 ~~(all external ones on the ovary included or always)~~ forming tubercles with long wool at tip and 6 to 8 thin yellowish brown bristle shaped spines, about 3 lines long; sepals of the tube also 40 or 50, narrowly lanceolate tip only free, also woolly and with about 6 brownish bristles; innermost sepals about 18 or 20 narrowly lanceolate, acuminate, entire, coloured without wool or spines; ~~30 to 40 in number~~. Petals 30 or 40 between rose and purple coloured, all denticulate towards the apex. — In flower 2 days

Send me if possible small live specimens of our other Indianola cacti

---

Lindheimer wrote again; he is near San Antonio; is perfectly delighted with the splendor of the Prairies there, says, this is the first time he has seen Prairies in their beauty, more gorgeous than the richest carpets and sweeter scented than the vanilla, or violets etc — right in the midst of Cacti, Mimoseae, Palmeae, Yuccae etc. — I hope much from this years collection;

Fremont left here last week, he was very clever, he is withal an enterprising young man, cautious & persevering, and we must recognize that he shows a taste for natural sciences especially botany which we find seldom among his class. — Pity that he has the foible to wish to do every thing himself. — (morbid ambition?) I did what I could to instruct and assist him. —

Yesterday (I write on the 11th), I was perfectly astonished to see Mr Halsted, who just arrived from the Prairies, having given up his trip in consequence of a series of misfortunes Mr Leconte has gone on.

Write soon again

Very truly yours
J Engelmann

Single

DS

Prof Asa Gray

Cambridge Mass.

[illegible] on June 2 per ship Cornelia
Fay & Farwell Boston for Dr Gray.

Cacti

Gaertner says that all Cactus have black seeds, but my Opuntia fruticosa has white ones and they germinate now in July, after having been in the ground 3 or 4 months, with two large cotyledons (first pair, the 1st long) oblong linear cotyledons!

Are the fascicles of spines on their shoots, which are plain, [illegible] distinct and collected in Cereus & Echinocactus, are they leaves or [illegible] I should think the first. The short spines of the Opuntia correspond with the [illegible] of many Cereus, Echinocactus etc. — the flowers come out of the axillary bud among and of the axills of the spines proper.

The genus of Cactus appears not to be well characterized. It would also be of importance to pay attention to the production of the flowers above (or in the axills of) the bundles of spines of the same year, or of last year. Of the few that I have now seen in flower, my two Echinocactus and my Mammillaria selota produce the flowers in the axills of the bundles of spines of the same year, and my Cereus repandus in those of last year. Opuntia vulgaris also has the flowers on the joints (branches) of last year. —

I shall be much obliged to you for live specimens of some Cactus for the Botanic Garden, if it will be quite convenient. Should there any from Texas, I think, and your specimen Cereus E. pugilis well, before you say that our fruticosa is the same. Can you compare also M. simplex and M. pusilla from those with [illegible]

The mammillaria seen by me in Gardens have all the flowers in the axills of the tubercles of last year, at least not at the top but [illegible] M. simplex and my selota have them in the center and in the axills of tubercles of the year and in a kind of the mammillaria which might be analogous with Melocactus, only not prominent. I have never seen a Melocactus. —

My Mammillaria similis will not come to flowering this season but many of the tubercles are also, though slightly, selota and produce at their base young branches or clusters of tubercles and sometimes also at their middle. M. selota has them just below the spines at the upper end of the stems.

Echinocactus gyrocanthus has a very woolly top — I would [illegible] E. Setispinus is smooth, with smooth flowers with [illegible] It is just now in flower for 6 weeks to 2 months after [illegible] I was mistaken in describing the flowers as very small, for [illegible] smaller flowering [illegible] it is about 2 inches long and [illegible] etc. — I shall describe it shortly and request you to make the necessary changes in the former description [illegible] the Dec. [illegible] of the flower [illegible]

I have again examined my Cuscutas micronuta etc. and find specimens from 5 or 6 different localities, but most have been collected on the Brazos in August 1843, and they are undoubtedly distributed in all or most of the sets; but I have no doubt that I also put some from Houston, from Galveston & from the mouth of the Brazos among the others, especially in the first sets, as some of the latter were finer specimens. I have retained from the Brazos unfortunately only a very poor & small specimen which appears to me rather L. acidota, as you suggest; but I have no doubt (I suppose) that micronuta Dc! is also amongst the set sent you of the sets. — L. micronuta has been collected by L. near Houston and near the mouth of the Brazos. L. acidota on the Brazos near San Felipe also near Houston (these are the finest & freshest specimens in the lot) and near the Mouth of Buffalobayou in Galvestonbay. L. micronuta from Houston (which I have sent you) has sessile heads and a very slender spike but the specimens from the Mouth of the Brazos have a thick & compact though very long spike; — flowers in both smaller & hence more pubescent than in the L. acidota. — This one has very frequently somewhat pedicelled heads!

Cuscuta oxycarpa! I have received a week or two ago a fine lot of Cuscutae from Europe, therein besides the European & asiatic species near twenty from southamerica & the Westindies, and quite a number from the N. States, mostly collected by Rugel 1841. I believe the same collector the first specimen seen by me of C. pentagona, which you sent me. Well in the collection I find a nearly identical specimen also from Portsmouth virginia! — Also the same plant from Florida. Also Cuscuta neuropetala from Florida!! C. oxycarpa from the Mts of N. Carolina, and perhaps a new species, which I have called C. glandulosa from Florida, I have seen the same from Louisiana in the Herb. Acad. Philadelph. — Rugels plant I got from Mr Shuttleworth at Berne. In a printed label he names my C. oxycarpa C. rostrata Shuttlew. Question, whether we shall not adopt this name? I dont know whether it is published anywhere, or only distributed with specimens. Drummond has also collected my C. polygonorum at Stoney, I find. — Shuttleworth pretends that my C. pentagona is C. arvensis Beyrich, and C. compacta = C. coronata Beyrich. I have not looked through the others yet but this is all I can learn about the Northamerican specimens.

Can an Orobanche be a Physostegia? It is impossible, and for my part would insist on the genus! calyx, corolla, anthers annual growth, every thing and especially the seeds constitute difference enough I should think. You find more about it under No 287 second Collect. —

I do not think that Monarda Lindheimeriana is published anywhere but I have sent specimens & seeds away under that name, does Bentl. not comprise different species?

All Monardas examined by me, some 10 or 12 species, have 13 nerves, only M. aristata has only 15!

If Eriorhizon is an Erigoneum I dont know how to examine the generic character of a plant! there are many genera less distinct than these!

Croton capitatus is even in Texas in the richest soil a low plant seeds larger and fatter etc wide No 304 second coll.

Monaea or Eustylis compare also my notes in letters of Carl Mueller April

Spartina. I believe that all the specimens distributed were collected on Galveston Island in saline grassies in black clayey soil. is flowers in May, they are small, about a foot high, and the flowers smaller than in juncea or cynosuroides, the only ones which I know. But I have also a specimen collected on the seacoast also in black saline marshes, in flower in July, and 4 feet high, leaves the same, flowers very similar but a little larger. I send a few flowers of both! I may have distributed one or 2 specimens of this form with the others, but am not sure, and rather doubt it. Sp. juncea was collected with this last.

Echinocaulus setispinus — floribus in vertice subdepresso glabris supra spinarum fasciculos hodiernos (of this years growth — I dont know wether the word is correctly used) extremis flavidulis provenientibus; calycis tubo obovato elongato, glaberrimo, sepalis numerosis, infimis orbiculatis obtusis superioribus ovatis cuspidatis, summis elongatis lanceolatis acutis omnibus margine membranaceis, tenuiter ciliatis; petalis petalis oblanceolatis acutis integris, numerosis, basi miniatis extrorsum pallide sulphureis; staminibus inclusis, filamentis ex toto tubo ortis, antheris aureis; stylo supra stamina longe exserto stigmate 6-7-fido, sulphureo, lobis recurvis.

Flowers 20 to 21 lines long, 24 lines in diameter, in my specimen 5 in number in the axills of the new bundles of spines of this years growth, springing from a very short yellowish tomentum but entirely glabrous. Above the bundle of spines and between them and the flower we find a short (hardly a lin. long) terete, solitary and persistent sort of a leaf- or bract-like organ, mostly single in a few instances two, side by side, when young fleshy, when old dry and longitudinally nerved. The short oval ovary and the funnelshaped tube are together about 9 lines long and covered with 20 to 30 scaly sepals, green in the middle with membranaceous delicately ciliate margins, larger interior sepals about 20 also ciliate; petals 25 to 30 with tn. many [illegible] filiform-

yellow with a very rich scarlet or orange-red tint, flowers orange, rather short, style much longer.

In flowers (cultivated in Florida) in July, 6 to 8 weeks after the others; flowers open two days, and only in sunshine.

Prof. Asa Gray
Cambridge
Mass.

5. I received from Japan today, by a letter dated Honolulu, January 11th. He was on his way to England. Says he has a collector near and near Hakodate in the northeastern part of Japan, and will communicate plants from England.

The 2 Pods 283 & 284 appear to me to be very distinct, and both bear seed. Proportion of parts of flower also different.

Now I believe I have answered your letter as well as I could. I hope it may come in time for the printing.

Yours truly

C. S. Sargent

Continuation of Lindheimer's Texas Plants. 1844

The Allium, sent under 287. proves to be identical with No 199 and has to be inserted into the list of Plants which have been distributed in the first collection, but are again sent (free of charge) with the second set.

199. Allium mutabile Mich. Shady moist places on the Millcreek, April & May. — Specimens larger than those collected 1843 near Houston; without bulbs in the umbella; stalk 12 to 20 inches high. — Ovaries with a crown of 3 scales, which disappear on the ripe capsule; in this respect dissimilar to A. angulosum Pursh (non Lin.) and A. stellatum Sims, where the 6 scales of the ovary remain as a crown on the capsule; ovaries with 6 ovules; capsule with 1 to 3 seeds.

---

310. Potamogeton diversifolius Bart. P. spiratus Sill. Journ. 46, pag 162. In clear rivulets in prairies west of San Felipe. April. — leaves 5 or 7 to 13-nerved.

311. Potamogeton natans Lin var? foliis infimis submersis elongato-lanceolatis utrinque acutissimis, pellucidis, brevius petiolatis; sequentibus longius petiolatis, sensim magis oblongis coriaceisque, summis natantibus oblongis obtusiusculis coriaceis; pedunculis aequalibus fructiferis crassioribus, fructibus centionalibus compressis, margine acutiusculis.

In clear water, especially in pools formed by slow running rivulets, west of the Brazos. fl. June. — This plant is apparently distinguished from P. natans, by the long petiole of the upper and the very short ones of the lower leaves, which are very narrowly lanceolate, also by the more elongated, not so obtuse upper leaves, but principally by the acute margin or carina of the fruit; in this respect it approaches P. fluitans, and on the whole it appears to be an intermediate or connecting form between both. — The leaves a similar form from the Lakes in the bottomlands of the Mississippi near St Louis; fruit entirely the same, swimming leaves elliptical, coriaceous, petiole, but frequently wanting, and generally appearing only after flowering; spikes mostly in the axills of the broadly lanceolate nearly sessile submersed leaves. The specimens without the upper leaves are difficult to distinguish from P. lucens Lin and it may possibly be a variety of this.

312. Xyris brevifolia Mich? Springy swampy places near Catspring, May. — I have seen this same species under this name sent by Dr Hale from Louisiana and it agrees tolerably well with Michaux's diagnosis, better than one sent by Mr Curtis from N. Carolina under that name, so I conclude it may be Michaux's plant. — Stems 10 to 15 inches high, twisted, slightly compressed with two prominent ~~angles~~ smooth angles, not thickened below the head; leaves setaceous, twisted 4 to 6 or 7 inches long; head globose, scales obovate, slightly crenulate, two lateral sepals obtusish, irregularly fringed and notched on the back; capsule obtuse.

I can distinguish 8 species of Xyris in my Collection; 5 in Texas, 2 eastern (X. caroliniensis "New York, & X. brevifolia" N. Carolina) and one ("fimbriata" Hale, but not Elliott) from Louisiana. It is easy to class them according to the stem (or scape) which is 2 or many angled; angles smooth or serrulate-scabrous; and according to the bracts and the lateral sepals.

313. Sisyrinchium minus n. sp. caule anripili, ramoso, folioso, spatha paulo inaequali, flores aequante s. paulo excedente; perigonii segmentis (caeruleis) ovatis exterioribus setaceo-mucronatis; capsulis obovatis, glabris.

Margin of pools etc in the prairie west of San Felipe, April.— Distinguished from the other N. American species by the smaller size of the whole plant, and all parts; the much branched stem, the ovate, not obcordate or emarginate lobes of the perigon and the oval not globose capsule. — Stem 4 to 6 inches high; leaves mostly cauline, 1 to 2 inches long, spaths 8 to 10 lines long, acute, not mucronate, inner valve a little shorter than the outer one, with about 4 flowers, of the same length or a little shorter, rarely somewhat longer; spaths after flowering increasing; segments of perigon blue, about 2½ to 3 lines long; capsule small, ovate or obovate, 2½ lines long, 1½ line in diameter; seeds numerous very small, impressed-dotted, black.

NB. Tar Morrea, No 189, must belong to a genus not enumerated in Endlicher though certainly a known plant as it appears to be very common in Texas; — it is distinguished by the broad connectivum between the cells of the anthers, which many mexican or south american Irideae appear to have, e.g. Cypella, Trigridia etc and is distinguished in this respect from Morrea. Base of filaments very broad triangular, but apparently not connected; stigmata 3, dilated, bifid. — The texan Ixia s. Nemostylis (Trichonema? Endl) must be different from the I. coelestina from Florida.

314. Amaryllis Lindheimerii n. sp. foliis linearibus planis, scapo uniflore, folia superante; flore intra spatham tubulosam bifidam pedunculato, pedunculo exserto; perigonii tubo subnullo, fauce nuda, limbo regulari erecto; staminibus inaequalibus inclusis sub declinatis, stigmate trifido, capsula subtrilobo-globosa, seminibus plurimis, compressis, alatis, nigris.

In black clayey soil in low parts of the Colorado-prairies; generally many together; in flower in Septemb. — Perigon inside yellow, outside reddish orange. — A small but very pretty bulbous plant; leaves 2 or 3 inches long, ½ to 1 line wide; scape 2 to 3 inches high, spaths about 9 lines long, scarious; peduncle 1 to 1½ inches long, flower 12 to 14 lines long; capsule about 4 lines in diameter. — An Amaryllis, belonging probably to Zephyranthes Endl, with an extremely short tube.

(If a distinct genus I should like to call it Lindheimeria. We should dedicate to it a showy and well distinguished plant; but we will get more new genera this season!)

NB. besides the Cooperia No 196 Lindheimer has sent a second species of which you get bulbs; it is distinguished by flat broad leaves, larger flowers, but especially by a long peduncle in the spaths (1-1½ inch long) segments of perianth ½ inches long; leaves 3 to 4 lines wide. —

Among the Cooperiae with sessile flowers I have perhaps two species according to the width of the leaves; one, from Houston has smaller bulbs and leaves ⅓ to ½ line wide (I have a few growing) more flat; the other from the Brazos has leaves 2 lines wide, more canaliculate. I whether there is a difference in the flowers, I do not know. You get bulbs, at least of the last one

Prof. Asa Gray
Cambridge
Massachusetts

314. Amaryllis Linkheimeri might be called A. lucida. I have had one in flower, the segments of the flower do not open, but remain half closed, twisting or somewhat compendulate. ~~Stam~~ flower inclined segments of perigonium somewhat unequal outer ones yellowish brown with darker red lines, numerous dirty yellowish with brown red lines, stamens inserted and very unequal, upper ones much shorter than lower ones, the upper most quite short. style as long as the longest stamen, stigma short 3 parted. Many pistillatia. — leaves nerved flat light green or grass green, nothing bluish in them, as in the Cany of both Cooperia's. — I shall send you a bulb in the winter. —

Echinocactus setispinus continues to flower, and has several small buds in the axills of the young clusters of spines.* Have I told you, that I found a very nearly related species in the Gardens here, flowers very similar tubercles more indistinctly connected in ribs, more separate, radiating spines straight one central one with a hook at the end — ought to be called E. uncinatus. Not described in Dewendelle.

You say Pharelis hirsuta (very silicate) is an Eulima — but it certainly has only 4 seeds — are there any other distinctions?

Let me know in what time the different parcel & boxes have arrived, if you can recollect, and what the expenses were — especially the small parcels. If they are cheap we can send frequently such packages, and need not avoid the convenience of travelling friends. They appear to come safe enough!

* E. setispinus continues to flower since beginning of July probably to winter, it is growing constantly new bunches of spines are forming in the centre and always a bud in their axills. In this respect it is very different from ~~that~~ E. gyracanthus which forms all the new clusters of spines and the flowerbuds at once in spring and only developes them during the season no new ones forming! I am satisfied that the examination of the manner of growth will furnish us with many good characters in the Cacti.

The 1st Dragoons are back from a tour to fort Laramie and from there at the foot of the Mountains to the Arkansas and back. — The Officers have brought a number of Cactus with them as I learn and I must obtain them. Mr LeConte came back with them and brought a few plants, nothing new. —

I found the other day a new (at least to me) Alisma, belong to the genus which is included between Alisma proper & Sagittaria Alisma rostratum and the large Alisma sagittaroides (or nid as I would call it) belong here also. Stamens definite,

Anthers extrors, flowers hermaphrodite, petals indurated distinguish the genus, and perhaps ovaries capitate; perhaps all true Alisms have ovaries verticillate? but the European A. ranunculoides, natans and ranunculoides have to be examined again, their ovaries, anthers etc, whether they do not belong here? — My new plant is a small thing with 9 stamina, I send you a specimen in this letter. — A. rostr. has 12 stam. & A. sagittaeifolia has 21! Has the genus already been distinguished?

I have examined Cuscuta Sauvaei & vulgivaga again, and believe them still distinct, though it is difficult to find satisfactory characteristics. If I am not mistaken C. Sauvaei has as well as C. adpressa an embryo with 2½ to 2¾ coils and C. vulgivaga only 1¾ — but I must examine again. — They are very near each other, but I can always distinguish them at first sight when fresh, and I must find satisfactory proof of their specific difference. —

But what do you say, when I tell you, that I have found in a prairie 20 miles from here our Polygonum cristatum together and entwined with scandens in great abundance! I shall send you seeds. — Perhaps it has been collected and neglected by others allready! —

I have paid some attention to the Cyperi this fall. On the Sandbars of the Mississippi C. erythrorhizos is common but only a few inches high and partly prostrate, or depressed and very similar in habit C. Michauxianus, among with it also the true C. diandrus very rare, but castaneus is common every where. C. erythrorhizos at swamps is 3 feet high, erect etc — I have also found this fall together with the Alisma above mentioned the Cyperus acuminatus, discovered here by Drummond. — That Alisma is very near Sagittaria pusilla, in habit etc but must be generically different. — Has it been described?

I have certainly 3 Cooperias.

1. One No 196 bulb as large as a hazle nut, ~~flow~~ ~~ov~~ ovary sessile in the spathe, perianth large, open segments oblong — leaves setaceous.

2. One from the Bryos, bulbs sent you last ~~fall~~ winter or spring, bulb as large as a hickory nut — ovary sessile in the spathe, perianth smaller rath closed, segments ovate; leaves linear channeled.

3, the largest bulb like an onion, leaves broad linear flat ~~flow~~ ovary pedicelled in the spathe, style included in the tube etc. — I have all three growing. I've got bulbs of this too. — Have all been described?

St Louis Sept 12th 45

My dear Sister

I have got your letter of July 29 and August 22d in due time, the Cactus came on well, and will no doubt vegetate. I am much obliged for it. — You find some notes on the other page. I am particularly pleased with the Alsinea which I send you, as also a fragment of the Polygonum existatum. Bryonia scabellaroides would perhaps better be called Dioistachoides. Isolepis globularis I can not find again, since the flood of last year — the vegetation in the bottom lands has been altered considerably; Ambrosia and Iva cover large tracts exclusively.

Phacelia hirsuta has only 4 ovules, why then an Eutoca?

If my Euphorbia geyeri is long known, though not invited, it ought to bear some other name but Geyeri, for example E commutata or some other.

I am pleased with your disposition of Ruellia but would request you to change the name of Dipteracanthus micranthus on account of Euphony in Dicanthus, or occulatus or parviflorus.

I send fruit of Isoetes No 35

I will try to collect Cryptophion again, perhaps in more complete specimens and if possible with seed; so that we may ascertain whether distinct or not from Dipyxis.

We have here some Texans in flower: Gaillardia amblygodon 3 feet high, Kyrinia canescens, Cosmidia pilifolia and many others.

I am anxious to see the printed Catalogue. Is it not possible to get yours Gramineae & Cyperaceae and where, can they be had at Wiley & Putnams? — My DeCandolle vol IX was burnt in the large fire in New York!

Yours truly

G. Engelmann

Notes to Plantæ Lindheimerianæ

In the Cordilly I believe you have sometimes been to short, where the plant has not been found in all parts of Texas; so 15. 16. 18. and others; you also leave out sometimes the month, when collected

17. very similar forms of H. mutilum have been sent ~~this~~ last season by other L. but the seeds proved them to be quite distinct from our gymnoc

38 do you consider A. glabra & A. carolinianum identical?

I like much your exposition of Polygonella etc.

169 Is that certainly the same as the south eastern plant? I have no specimens to compare.

185 & 186 not on Prairies, but on wet springy places

196 Have I told you that I have three species in cultivation? 2 this one, with the smallest bulb, and larger flower with spreading oblong linear segments of perigon really Drummond. Do your bulbs produce flowers? —

203 Is you consider clear for C. tetragonum! Has it been found more: Torrey had not seen it when his Cyperaceæ were printed! — The seed is remarkable

206 Are there not several plants ~~[illegible]~~ under S. Caroliniana? my ~~Texas~~ German specimens have 6 setæ 3 stigm, scales smooth on the back; the Galveston specimen has 3 setæ, 2 stigm. scales smooth, the Kentucky, Missouri & Illinois sp. have 5-6 setæ 2 stigm. scales woolly; all the American ones have ~~[illegible]~~ hardly half as large and much flatter than the German plant. A specimen from Mitchell, from Devils Lake has 2 stigm, 2 setæ, a larger nut, and a longer rostrum; — I suppose the American & European plants must be separated.

page 32 you have left 137 & 138 with my names instead of Herpestis monnieri & Bacopa elongata (139 and 138 —

233 The remarks about the fruit of different relations are most interesting

here as in 244 it ought to be Muskeet or Muskit

pag 38. Echinocactus setispinus; my first description of the flower was from a shrivelled imperfect flowerbud; but I must have send you a full description of the flower, as of that of the 3 other Cacti, though in a later letter, it was in flower for July till now, and would in a warm room undoubtedly continue to flower the last buds have been injured by the cool fall weather and are now shrivelled like that which I first described. It has the peculiarity to flower through the season! 2 or 3 flowers or single ones of a time. They are splendid, more than 2 inches diameter, yellow, and scarlet; I should like to figure them all, when they come to flower next season – but am afraid, that I can not do them justice. Send me a copy of your figure of Mamill. sulc. In a letter send you July 22d I have described it; it continues to develop clusters of spines through the season, and in the axill of each cluster is a flowerbud; but between it and the spines is a short fleshy persistent twist where you, angular it is next year, sometimes 2, a kind of bracten? I. Lindheimeri flowers only once, and brings forth no more that season branches of spines – a distinction which would justify a division in sections! I have a foreign species in Coll. which is in this respect and other similar to setispinus, as not described in the Prodromus

Have you tubers of Arclep. Lindheim? if not, I can spare you one or two

286 is Bigelovia tenuifolia, 287 B. truncata! Among Lindh. Plants is also your Dipteracanthus linearis which I had taken for a narrow leaved oblongifolius; also your D. Drummondii, which I supposed to be A. ciliatus tubiflorus; of this I have only 2 specimens, one as you describe it the other with narrower smoother leaves, both from Houston.

296 in the 6th line it ought to be: fructiferi tribus

About Polygona more afterward.

297 Eriogonum

306 Aphera humilis is the only of the 3 texan Aphanes with petals in the female flower; in both others they are wanting; but in all three the disc has 5 setae which I take neither for petals with Benth. (for they are opposite the carpina of the calyx, and exist in A. humilis with the petals) nor for filaments with Nutt – for they occur in many cortonaceous plants and also in the male flowers, always appendages of the disc.

314 Is Habranthus really distinct from Amaryllis?

315 Cleorhamis arcuatis. This may really be a variety of arcuatis, with a sharply 4 angular (perhaps 4 alat) calyx, greenish scales etc – but our common plant here is undoubtedly distinct from the Europ. Arcuatis. It is stouter, stem when fresh terete, spike longer, many-flowered, but not only half a large, and with 9, not 15 ribs (How is the eastern?) Base of stem stoloniferous! or rather creeping – a perennial?

318 Ch. polyphylla α. Michauxii A. Braun it ought to be; Michaux did not name it! –

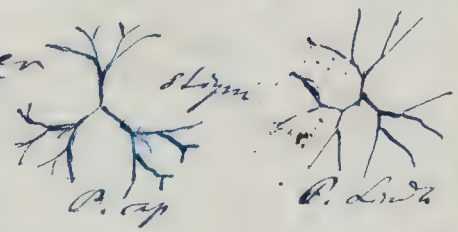
I have examined all our Alisma species, with more than 6 stamina; my small one with 9, A. rostratum a bad name, others having much more conspicuous points) and A. sagittaroides (would be better called A. radicans) branches of the scape rooting and am inclined to form a new genus out of the intermediate between Alisma & Sagittaria, which might be called, if nobody else has yet distinguished it Helanthium. It is probable that the european

Alisma parnassifolia natans & ranunculoides belong also here; besides the anthers and indefinite petals, the capitate ovaria would be distinguishing characters from Alisma to which only the species with verticillate ovaria would be restricted. Ones have 9, 12 & 24 stamina in a very curious and pretty arrangement. I think our Alisma Plantago specifically distinct from the European Plant. But my German specimens are not sufficiently mature to decide. —

I have again examined many Polygona. Most Polygona have an outer verticil of stamina, alternating with the segments of the perianth and ~~fr~~ many have from 1 to 3 of an inner verticil besides, being thus from 5 to 8 androus. The usual form of P. amphibium is the only one known to me, where only these 3 inner ones are found, the outer entirely wanting, ~~very frequ~~ the outer ones are never found in it but very frequently I find whole bushes with 6-merous flowers & 3 stamens and others with 6-merous fl. & 6 opposite stamens — in the former the 6 stamens are opposed to the inner segments; in the latter the 3 stamens opposed to the outer ones are developed & effect after those opp. to the inner ones! — But that is not all. All our forms of P. aviculare have no 5 outer but instead of 3 ~~always 5~~ inner opposite stamens! so that P. erectum can only by the habit be distinguished — No other difference from the European P. aviculare — neat the same. Or is it specifically distinct? Perhaps identical with P. plebejum & Br. Nordstedt — Question: Is your eastern form the same? I suspect so (though Elliott and all others repeat fl. 8 androus etc) as Darlington says flowers 5 androus — P. amphibium is distinguished by the smooth shining nut; P. erectum (perhaps) by the larger rougher more obtusely angled nut. — Pick some specimens up in your street and examine small flowers!

Send me also a small branch of your Polygon readers with ripe fruit — The plant puzzles me since I have found the small form, mentioned in my & sent

Pilinophytum Lindheimeri is certainly a distinct species. I have them both alive before me now. — P. L. is a stout plant 3 feet high with erect branches, leaves as stated before. P. capitata is a foot high with very many spreading branches. P. L. has flowers in spikes, P. c. in heads; in P. L. male flowers raised above the female or lower part of the spike, and the axis or axis after flowering naked raised above the capsules, finally deciduous. — P. L. 8 bracteae of fem. calyx less unequal than in P. c., in fruit twice as large as in P. c. much longer than the capsule and incurved so as to cover and include it, and acutish! stigmas always 12. seed somewhat globose, smaller. P. cap. has 8 bracteae of fem. calyx more unequal in fruit much smaller than P. L., not much longer than the capsule, and spreading so as to expose the top of the capsule — and spathulate obtuse or retuse — stigmas always about 18. seed compressed lenticular, always larger than in P. L.



Seed — P. c. nearly smooth,
in P. L. rough, wrinkled — warty

Now: restore me the species!

St Louis Octob 6th 1845

Dear Doctor

Saturday I got your letter and pamphlet so that the above remark, made some weeks ago becomes useless; I see you have retained the species P. Lind, though with a doubt. I am much pleased with the whole, and think you do me too much honor in putting my name first; my labor was certainly great, but probably not so efficient as yours. — I have heard nothing from Lindheimer since June. I have sent him letters of recommendation to Col Hitchcock 3rd Inf. who is said to be a gentleman of some scientific attainments but as at present situated, the location of the Army can not be so very favorable for collecting; perhaps

they will go more in the interior next spring. — I shall tell you about the Gram. & Cyperaceae.

Has Hooker got the Cactus & Seeds? I learn that those, sent to Germany have arrived and are flourishing. — What you tell me about Geyer was of some interest to me; I hope he has honesty enough to write me soon and pay, or offer at least plants, and I think I will wait a short time, before mentioning anything to Hooker, whom I would not like to prejudice against Geyer if he only behaves now.

But if you write to Hooker, please to tell him that the money coming to Lindheimer for Cactus Seeds, and the 4 sets of plants would best be sent by remitting me a bill of exchange on some wellknown house in London, which I can easily cash here. The same you might do through some house in Boston, with the money for Green etc. charge me with one half of the printing for extra copies. Have you sent one to Dr Darlington? Chapman? Thurber? [N.B. I have some years ago sent to Dr H. a set of duplicates, whose receipt he acknowledged but never returned any thing they had first requested in exchange. —] Oakes? & Carpenter etc.

You know that Hooker offered some years ago a loan of his Cuscutae for me to work them out, — I have since received from Germany a large set, so that a beginning to study the numerous & difficult South American species can be made and have now written to him accepting his offer but never received an answer. my letter was dated Dec 18th 1844. — His offer is a great one and I would never have thought of asking for it if he had not offered on his own account.

Spring was ~~early~~ last November in Pittsburg, going to the "Mountains of Texas" where he has been this season I do not know. He was with Sir Wm Stuart to the Rocky Mount 1843 he collects well, but is no botanist, and unreliable, a drinker.

You must have got my last letter the day you mailed yours. The Mammillaria appears to do well, it is very different from my M. uncinata, but resembles M. similis. Is it certainly M. vivipara? —

N. Bumelieae. I do not know; I never could well determine those I have. Here I have never found one, but in the interior of the State is one, of which I send a leaf no flowers; I find a note: corolla similar to B. lycioides, 20 lobed, middle lobe of external 3 lobed segments largest; but calyx & peduncle woolly and corolla smooth inside (B. lyc. corolla hairy inside at base, smaller) perhaps "B. Conzinosa"! — Lindheimer has sent several, one from Galveston appears the same as the mississippi plant, one from the Brazos as above but below woolly leaves, of which I also send one; one from Houston is similar but leaves sometimes obtuse and a little less hairy (I think it) — all these from Texas have woolly calyx. The last one is a young shoot with woolly spines. — One which I take for lycioides I have from Buckley from Alabama and the name B. tenax with lanceolate acuminate smooth leaves. —

Continued from the other sheet. ⊙, last letter, I have paid more attention to the species and think I know now 6 forms of climbing Polygonum with shining nuts and elated Convolvulus. 1, P. dumetorum, distinguished by the cordate hastate leaves 2, scandens 3, cristatum 4, my small one from here, with leaves & inflorescence of scandens, but fruit of cristatum 5. one with very large nuts, & wings which are decurrent fully to the nodule of the pedicell; — the supranodular part of which is naked in the others. 6. A small species 1–2 feet high, with axillary flowers from Beardstown (Geyer) small nuts

and wings terminating abruptly, not decurrent!
Now: are these differences — size of nut in size & shape of
wings (and colour, 1. 2. 5 are white and 3. 4. & 6 are
green) in length and condition (naked or winged) of
~~petiole~~ pedunole of any importance, if we can not
find some other characteristics. — The above
mentioned condition of P. avicularis even if we
have to consider it as the same species as the europe
one, will prove it to be an indigenous plant! a
thing of some importance in these times, where nativism
becomes so prominent! — Polyg. ciliinode I have never
seen & should like to obtain it.

Bumelia from Missouri is the Carpet leaf & the plants
" Bigelow " smaller about half as
" Arnold " Longest with the leaf

Prof. A. Gray
(Bumelia in)
Cambridge
Mass

Prof. Engelmann
Washington U.
Next for W. of W. ti
W. S. Kilbourne
St. Louis

I ought to tell you now of many observations on Cyperaceae
made since I received Torrey's work (I could next year
extend them on Gramineae if I had years — could it
not be obtained for love or money?) — but have no
space or time (it is very sickly here and physic
very busy). Only that we have 2 forms of Trichelostylis autumn
here, one without tubercle the other with a persistent one
exactly like an Eleocharis!! —

truly yours
G. Engelmann

St Louis Nov. 29th 1845

My dear Doctor

My last letter must have met yours on the way; it was dated Octob 6th. Since that time I have received a long letter from Lindheimer, from August. He appears to have collected fine things but not as much as we wanted; he has not the skill to do these things quick and mechanically. In the letter were included fragments of plants; one was a Cassia? foliis unijugis – Many of the plants of that region must be the same as those of the Upper Arkansas! e.g. Menzelia etc. About Cactus he makes some interesting remarks; our E. setispinus and C. caespitosus appear to be more fully developed there, farther south, and grow higher. He promises to send many – if they are not killed by our sudden and severe frosts (Thermometer zero day before yesterday!) – Have you all the species living, which I sent you last spring? –

The surplus copies of Pl. Lindh. I have got, but not yet Drummond vol 9 – my copy was burnt in the great fire in N York! I expect also this (fall or) winter Hooker's work from Europe. Is there any addition to Endlicher published since the 3d supple? How is it that I hear nothing of Hooker? Have I offended him by reminding him of his offer to send me Cies cuttings? However I must shortly get a letter from him about the money affairs. A bill on any good house in London can be easily cashed here. – I am astonished that Geyer should not have written me at all for England, after his long letter from the Sandwich Islands dated last February. – Do you hear anything about his doings – He could not have done less than offered a set of his collections as part payment for

his debt! If you want his plants only to look at, not to have them in your possession, I should think that it would not be necessary for you to go into the expense of buying them; you might just ask Geyer through Hooker to send me a complete set as part payment. But I dont want to make any offers to G. myself. — You may retain the plants till you have sufficiently examined them.

Do you expect to do any thing with the Flora really? Pity that you are not able to publish faster! —

I feel very much the want of a work on our Grasses, — is it not possible to get a copy of your Cyp. & Gramineae for love or money — I must have it. — I would also consider it a great favour to obtain the different treatises on n. american, especially western, fishes published since a number of years in the Boston journal. I would offer in exchange western fishes in alcohol, or the use of a considerable number of drawings of fishes, made by me since several years. — But your Gramineae is what I especially want. —

I shall send a good set of our plants to Mr Carey, such as I have at disposal this fall, and will be glad if I can help a little to make him forget his immense loss.

A few weeks ago I succeeded to tear myself off from this place, ~~and~~ which I had not left since 5 years; and spent two weeks in a journey through our Mining region south and southwest of this. You will conceive that it was rather a poor harvest for the botanist to be made in November, but still I have found many interesting things — vestiges of better times! — I should like to have written something for publication about the geology and botany of this interesting and as yet little known country — but the botanical part would be too poor; and it would appear ridiculous to give an account of a botanical tour instead in November! Still I found even then some fine plants in flower.

December 7th

I had written so far, when I got your letter of Nov. 20th. The check was cashed without any difficulty. — I am sorry that I can not have your Gramineae. — I shall write to Hooker as soon as I receive the next lot of Lindheimers plants & Carices, so that I can communicate something new to him, and ask him again for the Cusparia — and speak about Geyer. — But I am afraid I can not do so much in botany this winter as I wished, my medical practice keeps me too busy. — The Mississippi is frozen over since yesterday, and thousands cross the father of rivers now on foot. — I hope that Lindheimers Carices are not 100 or 150 miles below here, where many boats from below wait the opening of navigation! They would be destroyed by frost. — When you have leisure, tell me, which of Lindheimers Carices are growing with you. — I hope you have noticed the corrections to Carices Lindheim. in the Boston journal, especially the Echinocarices setispicus (of which and of C. Lindheimeri I include flowers in this letter), as the description of the new

species will be copied into European Journals, and I should not like them to ~~copy~~ copy the errors' also. — I am sorry you have named an inconspicuous californ. plant Nicollettia; I had reserved that name for a showy or peculiarly interesting genus, so that a species could be named N. insignis or something like it. —

N.B. In a list of species, hybrids & varieties of Cactaceae for sale in a French market garden I find an Echinocactus texanus !! Is that E. lindheimeri? — We shall soon learn.

I have still a few, the last, sets of Lindheimer here, which I will send you, so that you may have some to spare for further applications. But they are the last sets and the specimens much poorer than in the first ones, so that they may go cheaper. One for Mr Oakes I have already laid aside.

I intend to send you in future a specimen of every species collected by Lindh, — so that we may notice all even ~~such~~, where not enough is there for distribution; — in the same way as you noticed Phacoanthus virgatus etc. —

I have no doubt that Lindheimer will with pleasure send you bulbs seeds cuttings etc. And he has now near San Antonio a little botan. garden, where he collects living plants, so that you see he has already made the preparations. — He probably sends things best towards the end of March so that they may reach you in April, when there is no more danger of their freezing. — If I get,

as

St Louis Jan 3d 1846

My dear Doctor

Your favors of Nov. 27th and Dec 11th were received in due time. I have here the five last sets, 26 to 30 of Linth. Plants, which I will send you with the first opportunity for Mssrs Oakes, Lowell Cleaveland and Durand, and the last for the next possible subscriber. But Hooker writes me that 2 of Linthiemus parcels are still undisposed off; so that he must have disposed of one, as you have sent him 3. — He says they are difficult of sale in England, as containing mostly the same plants as Drummonds. — Now, would it not be better to send them back to you, as Hooker can do that free of expense, and give them to Mssrs Oakes & Lowell; they would get more and probably better specimens than in the last sets which I have here: I leave that to your consideration, but shall send on all I have left, as soon as winter breaks,

An important object of my letter is to request your assistance in getting some thermometers made by the best maker of physical instruments of this kind in Boston. They ought to be of the description given in the inclosed paper V. A Gentleman from here, who has frequently assisted us by carrying parcels of plants, Mr Kimm from here, will call on the instrument maker for the thermometers in a few weeks; — perhaps you may have something for me too to give to him. By the by, Hooker writes me, you had numbers of his journal for me down to No 47. — Dr Wislizenus, my friend, and since 5 years my partner, wants those thermometers to measure altitudes with them by the boiling point. He will leave here in the spring for Santa Fé Chihuahua, probably Durango & Zacatecas, and finally California

Inclosed a little gem for a letter from Linthiemus, what is it?

Though he is no botanist, he takes an interest in natural sciences generally, and has made himself so far acquainted with them as to be able to collect well; which he has promised to do, specimens as well as seeds etc. So you see that this interesting journey will probably turn out to the benefit and advancement of botany also. And is even not impossible that a young physician from Germany may accompany Dr Weizgenus, who has made most interesting botanical collections in the South of France and came warmly recommended by Prof A Braun; Dr Wunderly; The change will be fine then! — Therefore do undergo the trouble about the thermometers, and take care to entrust the thing to the right hands. Please leave a note for Mr Kimm at the house of _____ (I forgot the name, but I wrote to you about it in my last letter, when I requested to put any thing for me there) to tell him where he shall call for the thermometers. — Please tell the Instrumentmaker if necessary that you would be responsible for pay.

Lindheimer writes from the beginning of November, his collection is not larger than last year's he says, but very fine; Seeds he has many, and especially fine Cacteae; and from his description there must be at least 4 which we not yet have; but he is afraid of our winters and will not send the Cacteae before March — and so the other things, collection and all, about which I am very sorry, as now I have best leisure to arrange and examine them! — He has laboured under many disadvantages part of the season, a slight tent, rainy or very hot weather etc, so that he could do not as much as he hoped. — He must do more coming season!

Hooker has sent me his Cucurbitae! which is a grand thing in him, to trust one with so far off!

They will come through you on Wiley & Putnam; and may be here about the same time as Lindheimers plants! very disagreable! —

Fremonts plants I had in my hands, he permitted me to open the box. I arranged them and took notes. Among the Compositae I find a Grindelia, No 185 which is probably a new species and might be called G. papposa. Grindelia squarrosa 167 a variety? 81 Englemannia! I have got it from others also from the same region and from Lindheimer from Texas. 58. Cosmidium gracile! 99 & 235 is probably a new species of Dysodia? intermediate between the two species in your flora 228 is your Palafoxia subradiata, but is it not a proper species? it appears to be so different from P. Hookeriana. 109 & 179 Artemisia filifolia? 170 Senecio Riddellii? in among the others I was struck with a remarkable Heliotropium with large white flowers, Cuscuta glomerata 93; Hofmannseggia, Cyperus cryptolepis? Henderandra texensis, Euphorbia Geyeri Verbena bipinnatifida, a new? species of Salvia, annual! 200. a new? Orobanche and others.

I am working through the Carices and Cyperaceae in general now, but find nothing very remarkable in my collection, as I had never collected those plants understandingly. I shall look to them next spring! — — C. Meadii appears different from C. panicea, but how with C. tetanica? which I do not know. — I should like to work through my Gramineae also but have at present no work to help me along. How is Kunth in these classes? sufficiently explicit? I have ordered it from Europe and hope to get it, when the river opens, as it must be now in New Orleans.

I have so far said nothing about Geyer's Conduct to Hooker, but The mean impudent fellow has behaved so towards H. that I must now fully expose him. H. procured him free passage on the Hudson's Bay Co ships, gave him a large room to arrange his plants etc. in, when G. suddenly intimated that he had undertaken the whole voyage for Hooker and by his request and expected now H. to buy the whole collection from him !! When he could not come it that way, nor with an impertinent letter, he humbly apologized and appears to have ingratiated himself again with Hooker. – I must write now all about him, and shall do it by the next steamer. I myself can expect nothing from Geyer, if Hooker does not assist me. I had trusted the fellow so much, that I have no note or any thing from him, and now he does not even write me or make promises. he thinks, I know, that now under the patronage of Hooker etc he does not want me any more. – You

Lindheimer asks, whether he should also send roots, shrubs etc – so that he meets your wishes half way, and I shall draw on you for $75 as soon as I find a good opportunity to send him the money.

Hooker says Cereus cespitosus is the same as C. pectiniferus (? I can not read the name well.) his cactae have come well; but he does not mention the ~~list of~~ Rantan Lindheim – you have undoubtedly send them to him, and enough copies for all the subscribers. I shall send a copy with each parcel of plants.

A propos, how is it with the flora; I think Mr Durand is right in his enquiries, but the sound of new plants ought not to prevent the work from going on; when should it else be finished?

very truly yours G. Engelmann

Dr. D. G. Elliot

St. Louis March 20th 1846

My dear Doctor,

Your letter of Feb. 27th arrived in due time, for I was afraid something might have happened to you, since as I was about 3 months without hearing from you, and also from Hooker, parcel, which according to a late letter of his, he expects in my hands since long time. —

I should be much obliged to you, to obtain for me a copy of Storer's Fishes, as you promise, and shall with pleasure send to him the drawings of about 15 or 20 of our fishes, and descriptions of them, which I have made several years ago, when I had more leisure than now. They may possibly be of some interest to him. I will send them in my next package of plants, which will be sent soon. I have lately distributed all my duplicates, for the last 3 years, Geyers and Lindheimers included; — I have concluded to send you a specimen of each of Lindheimers plants, whenever I have a duplicate; as in that way we shall be able, without a doubt or misunderstanding, gradually to get the whole flora of Texas ~~and~~ as you can also compare Drummond's, Nuttall's & others collection; I have left out only those, where I have only one specimen, or sent of course, as I have already sent you.

I am very sorry that I did not know the lovely desire to obtain western plants; I could have

put aside quite a pretty little collection for him, but I shall do some yet, and pay attention to it coming season. I would desire very much to increase my library in this way; for example I should like to obtain in this manner the different journals of the Boston Society, the Norfolk Lyceum and the Philadelphia Academy. By the way, would not some of our large and interesting and peculiar fishes, as the different species of Sturgeon and shovelfish (Spatularia or Polyodon) be an excellent means of exchange?? —

Hooker writes that he had sold the two remaining sets of Schweinitz's plants — but I am under the impression that you had send him 3 more than he had subscribed for. — I originally sent him 4 (Nos 1.2.3.4), and to you 4 more, than your subscribers had to get (19.20.21.22) No 19 you retained and afterwards gave to Mr Carey the 3 others you sent, as you told me to Hooker. Is it so? — I have directed Hooker to the remaining sets in the Hands of Prof Braun in Germany; I myself have after supplying Prof Reavelous Dakes and Durand only one set left, No 30, which I will send you also with the others in my next box.

Hooker says his subscribers complain that his catalogue is so full with tree plants. Did you not send one copy of the Flora Lindh. with for each set? If you have not done so, I wish you would do it yet as soon as an opportunity offers. He should have 6 copies more, as his 6 subscribers have none of them yet them. If the you have them not to spare, I can let you have a few which are still in my hands. —

Dr Wislizenus is preparing himself well for his expedition, and I hope he will be able to make a good journey and send home fine collections. We have also had a Dr Gregg here, who is also going to New Mexico and California, and will do something for natural history. — Dr Gregg is an old western traveller and has written an interesting work: Commerce of the Prairies. He studied medicine last winter in Louisville, and has been instructed for botanical collections by Dr Short. —

I am not aware that any thing has been published about Nicollet, and it is a shame that it has not been. In a long review on Capt Fremont's report, which I have published in a scientific Journal in Germany I have said all about Nicollet, as whose pupil and follower Fremont must be considered, that I could learn or recollected about him. He very seldom spoke of himself or his history. Perhaps Mr Delafondt, the French Consul General in New York (if he is still there) knows more about him, as N. was his personal friend. Perhaps I can learn something more also here, among the old French

settlers, with whom Mr N. was in much intercourse.
— Scirpus lacustris americanus has a great resemblance
with the European Sc. Tabernaemontani (2 slight,
smaller fruit) but Sc. Tab. is a much smaller
plant; in habit our Sc. Tab. lacustris is similar
to the European plant. —

I find among Lindheimer plants a Ceratophyllum
different from both known species; ~~[illegible]~~ I have
only one specimen, and shall send you a fragment.

Nothing from Lindheimer yet. —

Very truly yours

Geo. Engelmann

Prof. A. Gray

Cambridge Mass

Catalogue of Cactae & seeds in box sent 1st April 1846 to Dr Gray, Cambridge.

№ 1. Spermopsis carolinian
2. Opuntia, large, with red fruit
3. Vernonia n. sp.
4 Yucca ?
5. Polanisia trachyspermum ?
6. ? Lindh. Catal. nro. ?
7 Sophora ? L. Cat 332
8 Erysimum Lawenworthii
9. Cooperia ?
10. Helianthus Cuticolius ?
11 Mountain grape, bushy not climbing. n sp ?
12. Cassia n. sp.
13. ♀ L. Cat. 419.
14. Malavisous drum
15. Sabina, large, red № 460 ? 370 ?
16. Cedar apple, an edible fruit for the Mississippi boy, plant similar to Yucca
17. Echinocactus Lindheimeri
18 Erythrina, stem woody, 6-8' Mississippi boy
19. Cassia n. sp. very probably your C. Chiflora
20. Astragalus caryocarpus ? ?
21. ? = Hno 416 ?
22. Chrysopsis
23 Euphorbia fulvosa n. sp.
24 Euphorbia media n. sp.
25. Menzelia n sp
26. Euphorbia arkansana
27 Oenothera missouriensis ?
28. Asclepias Lindheimeri ?
29. Opuntia sp.
30 Androcera Cobata
31. Lagenaria n. sp. white flowers, seeds mixed perhaps with a species of Cucurbita
32. Cucumis perennis !

---

33. Sisymbrium canescens
34 Croton debilis nov. sp. n.
35 Helianthemum pusillum mihi
36. Arabis stricta
38 Nasturtium sessiliflorum
39. Phyllanthus obovatus
40. Diplomanthera microanthera
41 Nasturtium obtusum
42 Cnidoscolus mollis
43 Euphorbia hemiandra
45 Polygonum ramosissimum 6 andrum
47 Malva Papaver (Arkansas
50 Coryphis microanthera mihi
N. compare seeds with C. aureus they are quite different !
51. Acanthes longifolia
52. Cuscuta adpressa
53 Asclepias capillaris
54 Aster oblongifolius

55. Helianthus hirsutus
56. Nabalus racemosus
57. Aster planiscapus
58. A. anomalus
59. Vernonia arkansana
~~60 Gentian sp~~
61 Coreopsis carolina
62 Bumelia
64 Nabalus asper
66 Opuntia south Missouri

67. Rhinanthera for south Missouri
68. Sida rhombifolia
69. Cotinopsis linearis
70 Eleocharis obtusa
71. Allium stellatum
72. Anoropha racemosus
73 Solidago petiolaris ??
74 S. pulverulenta ??
75. Cuscuta polygonorum
76. C. Cephalanthi
77. C. Coryli
78. C. Racemosi

---

79. Polyg. scandens medium
80 Polyg. sc. microphyllum
81. P. sc. macrospermum
82. P. ramosissimum
83 P. erectum
84. P. aviculare 5 under.
85. Helianthemum rostratum
86. Euclenia (Alisma) albida
87. Cardamine hirsuta
88. Euphorbia hemistata mihi
89. Spermacoce glabra
90. Cyperus erythrorhizus ⊙
92. C. n. sp. tenuissima ⊙
92. C. mikauxianus ⊙
93 C. rivularis 4
94 C. castaneus ⊙
96. Lespedeza hirta
97 Lithospermum canescens
98. Hypericum prolificum
for rocky hills.
Mammillaria applanata
M. intertexta
M. similis ?
M. pelecyra

Cereus vespitosus 4 specimens
Opuntia fulgida 10 —
Opuntia vulgaris minor (missouri) 1
Mammillaria applanata 2
M intertexta 4
M similis 1844 1
M similis ? 1845 3
M. similis ? parti major 1
M. pelecyra 2

Cooperia drummondii 2
C. drummondii ? 6
Helianthemum texanum 1
Allium stellatum missouri 4
Asclepias Lindheimeri 3.

1 – 32 from Texas
33 – 98 Missouri

St Louis April 27th 1846

My dear Doctor

Your letter of April 8th was received in due time. About the same time I have received the Cacteae from Hooker in excellent condition, but not as many as I expected, and with terrible labels — which in many cases I can not read at all. On the same day a parcel from Europe came to hand with Siberian plants and among other books, Kunths work — and further the long expected boxes from Lindheimer! Seeds few, Cactus a fine lot — but dry plants too few to distribute them — I was quite mad! He has sent about 250 Numbers, only 27 Species with 30, specimens 15 with twenty etc. on the whole there are only 7 or 8 with more than ten specimens! Impossible to do any thing with them this season

But the plants are fine, many things unknown to me at least — many fine Labiatae, some arborescent Leguminosae (Sophora?) some fine new Cassias some Eysenhardtia Dietr. (why this eternal name?) with fine flowers and fruit — a new species Acalypha etc —

We have to wait till the collection of this season comes in; I hope not to be disappointed again, when I say that he will do better this season; he is better prepared, has an assistant, a good house etc, when part of last year he was camping out, travelling etc — I will do what I can to spur him up.

He has sent a number of Cactus, different from those of last year, a simple, red respiture Mammillaria, which I provisionally call M. applanata, another one which must on account of its spines be called M. intertexta; both are for the interior country on the head waters of the Pierdenales River ~~A third~~, Both I have sent to you last week together with a number of seeds from Texas & from here; In the box is a smaller one, which I beg you to send to Hooker, and make him pay part of the expenses. I have sent to you only a few Cactus, as L. wrote to me that he was preparing a box for you, to go direct, and I suppose that will include many of the same species. He will send you besides two ~~two~~ species of Cactus from San Antonio, of which I have only got the seeds from him, as he had then no live specimens. One may be called from his description and drawing Echinocactus columnaris — if it is not rather a small Cereus, and the other Mammillaria digitata, with very long tubercules — but the seed of this, which I have seen does not appear to differ from my M. similis whether the plant does, I am unable to say.

L. wanted to send you a number of shrubs but will try but few, as the season was too far advanced, when he got my letter informing him of your wishes and the Lowells offer. He will do better next year.

He wishes us to describe and publish all the new Cactae, as the same have been sent this spring to Berlin from another Collector and they may be published there. — What do you say about it? — I think I have the above named two new species, and a third, very different with green fruit, mammillaria multiceps, and you have one or two new species. — How do they compare with Mexican species? —

Of Lindheimers plants of 1845 I shall send you in a couple of weeks your specimens, and to save labor and time, I shall request you to look them through, and tell me which of them are known to you, so that I need not trouble myself with laborious examinations of known plants. Drummond appears to have been through that region and to have collected a number of those plants already. You will be pleased with your Rhamnus? texensis in flower & fruit, Lyciums hands the same, a Sophora? with scarlet beans and blue Borrow flowers, an Berberis? and many many others.

At present I was much occupied with distributing the Cactae and Seeds, with the preliminary arrangement of the Texas plant and especially with the preparations for Dr Wislizenus; so that I had to lay aside all other work, as I was also very busy in my medical practice. But now I shall complete the distribution of all my duplicates, which I hope will be done in two weeks, when I shall send a large box to Mr Carey, for himself, for you, Mr Cleveland etc etc —

Have I told you, that a few weeks ago a Dr Gregg was here, on his way to Santa Fe and California. He is the author of the work: Commerce of the Prairies is an old Santa Fe trader, has studied a little

Medicine lately and prepared himself for a scientific Trip. Dr Short has instructed him in collecting plants etc and I have also done what I could to direct & encourage him. — But I expect more from my friend and (hitherto for 6 years) partner, Dr Wislizenus; he has also been to the Mountains before, and is scientifically and materially well prepared for his undertaking. It is a pity though that he takes not much interest in botany; he is however prepared to collect much, and I think he will do it. — The Thermometers we have examined and every day compared with Barometers and find them very satisfactory; it will be possible to ascertain altitudes with them, ~~about~~ correctly to within 2 or 300 feet — which I would not say by far of the Fremonts observations. —

When you get Lindheimers box, which he sends directly, and mine, you will do me a favor to get Mr Lowell to send me a check for Lindheimer. —

As soon as I am at leisure, I shall send some interesting fishes to Boston; I am also preparing a parcel for Mr Lowell, which will be sent with yours. Your genera illustrata will be a very agreable exchange, as well as other works, which ~~for~~ he might have on natural history of N. America, especially botany — and which I have not yet. I have a copy of Michaux. — I have received the money for Lindheimer from Hooker. —

If you work at flora this summer, I will send you every thing I can get from Lindheimer during the summer, which may ~~belong~~ ~~under the~~ belong to families you study this season, as soon as obtained; he has promised a box in May or June.

My sons shall be forth-coming soon

In haste

Yours truly

George Engelmann

Adelaide May 5th 1846

My dear Doctor

About a week ago I wrote to you [illegible] of Australian plants and about a box [illegible] I had sent you. I hope you may have received it by this time, and may forward the part destined for Sir Wm Hooker as soon as a steamer will leave.

In return I send you a number of [illegible] Myosotis collected a few days ago. Command my services whenever you think they may be useful.

I am afraid I shall find it impossible to send any more living plants in the fresh state, as was my intention, for I get myself more & more circumscribed in my movements by increasing medical practice since the departure of my late partner. I hope he will do much for geography and natural history in general.

I have been able to spare a few hours in examining some of the Adelaide plants, and am delighted to give you few specimens of a Malpighiaceous plant probably a Stipularia; a new? Sapindaceous shrub, genus Jacksonia? with flower buds; several Gilias a Buddlea a Dianthous Scophularinea with a stiff calyx a Pistolepis? a Mystagine near Okenia, a Celosia etc

You will be delighted to get them, much will be

the case as soon as I can distribute the balance of my remaining duplicates, which I will be happy to share with my friends & correspondents.

Very truly

yours

George Engelmann

Dr Gray

Please examine again the specimens of Lindheimer sent as No 139 in the collection of 1844 — I find them entirely distinct from the true B. elongata, sent 1843 in parcel I. of Lindheimer's plants, but I don't know, whether all specimens of 1844 are the same. It has been distributed in all collections from No 15 to No 30. — The true B. elong. of 1843 is in all collections from 1 to 26, so that 15 to 26 have both.

Send Mexican 30th

St Louis May 19th 1846

Dear Doctor,

I have just got a letter from Lindheimer, where he says, he had sent about the end of March to you, including the following specimens of live plants etc,

1. Yucca filamentosa, remarkably fine, stem more than a foot high (east of San Antonio it is always stemless.)
2. Yucca, a young specimen; stem becomes 6 to 10 feet, frequently branching, often 7 branches; common peduncle 1-2 inches thick, branching, thyrsus or panicle 2—4 feet long, with 200 to 500 flowers.
3. Yucca, 4 specimens; stemless
4. A singular monocotyledonous plant, with short subterranean stem; leaves decumbent, forming a mass, often 10 to 15 feet in circumference; from the centre a panicle of small flowers, about a foot long. — On the rocky declivities of the elevated plains.
5. Another monocotyledonous plant, of the rocky high plains, with long aculeate leaves; ~~flowering~~ stem ~~[illegible]~~ 6-9 inches thick, nearly globose; flowering stem with the panicle of small flowers about 4-6 feet high. (4 specimens.
6. 1 specimen, similar to Yucca

7, Echinocactus Lindheimeri, 3 specimens one very large
8, Echinocactus (is perhaps a Cereus, from the description)
with 13 ridges, from San Antonio; 10 fine specimens, one very large, more than 1 foot long (I have not yet seen this)
9. Cereus caespitosus 12 specimens.
10. Opuntia frosa indica 1. sp.
11. A much larger Opuntia; probably the Mexican Nopal
2 large joints.
12. Small Opuntia of the prairies; 2 sp.
13. Mammillaria applanata 1 very fine specimen
14. Mammillaria 2 sp
15 do 2 sp.
16 Opuntia platyacanthus, some branches
17 Seed of the Sophora? which I have also sent you.
18 Cooperia, large species a number of bulbs.
Algarobia Sophora and others had been collected but it appeared too late, so that Lindh. left them out. — Give him accurate instructions how to prepare and collect roots, shrubs etc. He asks whether you desire more ornamental or botanically interesting plants — I think both, for yourself & Mr Lowell. Shall he collect and send in fall or Spring?

I get a letter from Dr Klotzsch today; he complains of your not answering him, he had written you two letters. He sends me specimens or fragments of all Cacteae of the royal herbarium; also Humboldt specimens, from Willdenow's Herbarium; Kunth, he says, will probably not send any thing.

He asks again for the exact date of your publication of Engelmannia; — will send to me some bibliological work for Mr Buckerman.

We are all in uproar here, and I am burning myself to collect new Cacteae; in New Mexico or on the Rio Grande — but shall most probably have to stay here! — but whether Lindheimer has not shouldered the rifle again, I dont know yet. — Dr Wislizenus has left the frontiers a few days ago for Santa Fe. —

Got a letter from Geyer a few days ago — humble, submissive; complains that all his exertions, & pecuniary have not been paid by his sales of plants, and that now nothing at all is left to him but a broke constitution and so on. — Let him go! —

If you have any thing to write directly to Lindheimer you can direct a letter to Mr F. Lindheimer, New Braunfels, Bexar Co Texas 10 cents from Boston to the Guadeloupe! They go safely & directly now. —

I am so much occupied now, that I have not begun to study the Cacteae, and have not even finished the distribution of my Texas duplicates.

Cacteae are not well known and certainly very unnaturally ~~divided~~ distributed — there genus I saw a few days ago here a splendid foreign Echinocactus, globose, rather depressed etc, but

but the splendid white flower comes from the older fascicles, nearly at the base, not from the new ones, and is evidently most nearly allied to Cereus grandiflorus, but is open for several days, day & night! — I believe they have never too much described yet the shape of the flower.

Prof Asa Gray
Cambridge
Mass.

Mammillaria similis is now in flower, very distinct, dirty yellow, two inches long; sepals fimbriate.

Mammillaria similis? macrocarpa, sent you last month, is a distinct species, comes now in flower. The plant is distinct by the central spine, which is never in M. similis. — Seed the same; all Mammillariae with red globose berries, may form a distinct group.

Very truly yours,
G. Engelmann

St Louis June 25th 1846

My dear Sister

I have a few days ago finished an immense labour, distributing about 8000 or 9000 duplicates amongst some 30 correspondents. This has kept my leisure hours completely filled up since New Year. But I am through now, and am just now putting aside a specimen of each of Lindheimers 1845 plants for you; I shall send a large box in a week or so to J Carey, with the request to distribute the contents. It will also contain the Texas sets for Dennant Cleveland etc — that for Cleveland, Baker etc I shall direct to you; for Dennant direct by Mr Carey. Mind of all that when I have sent the box. It contains also a large package for you, the Texas plants collected formerly by Lindheimer & not yet in your hands, of which I had a specimen to spare so as to help to make your Texan collection as complete as possible. —

I have had a letter from Lindheimer a few days ago, dated May 27. He was packing a box of plants & Cactus — this however has not arrived. He says he is very industrious, and finds enough to collect about his neighbourhood to keep him fully employed, so that he does not loose time in more distant trips. He tells me that he sent the box destined for you in the first days of March to La Vacca on the Matagorda bay — and the next he could learn of it was that the commission merchants there had not yet sent it by the end of April! but he could send it at their soon. I hope it has

arrived by this time, and does not prove quite worthless. I hope the same of my box, which has also been lying here more than two weeks in the office of the reliance line (good reason that!) but has been shipped. They say it was stowed away somewhere, as it had not reached you by June 8th. We are badly off for such things in this western Country.

Now as to your desire to have a Collector at Santa Fe. I believe I have found a young man, who since last year has been collecting for his amusement here and has in that way, and with my assistance begun to study Botany, and is fond of it; but he can not yet be called a Botanist, nor even a collector; but after a little more experience hope he will do well. He is not quite resolved, but if he goes, which I think is probable, he may be able to go in 2 weeks; he would take a younger brother as assistant along with him who says he can raise 75 Dollars himself. The question is, how to send him, how he should be fitted out? Must he rely entirely on the government expedition or ought he to have a light waggon with one or two mules, and his outfit all for himself, or only be under the protection of government? — I would prefer this last vastly; think the first even impracticable. I think government would not trouble itself with more, and least of all the commander of the last expedition, Col Kearney, after all I have heard of him. — If he must have a waggon and mules himself, he must have about $250 loaned to him, if not, he wants very little. Perhaps he could have the paper & baggage taken to Santa Fe by traders (freight) or government and go himself on a mule — finish his work only there; That would be the cheapest way; if he did well, why, he could afterwards procure a more commodious and efficient outfit. — On further consideration I think I will propose and try to effect this: send him as cheaply as possible and do more for him, when he proves himself worthy. Geyer has made me a little shy. I will write to some officers, which I know at first leave with them though I am afraid it is too late now, if no other steps are sent as a reserve, or suppose with a [illegible] etc. You must write also to the proper persons in Washington or elsewhere. Col Abert or the Adjt General will know to be applied to, probably better the latter; and let it be done at once and efficiently. Government ought if possible attach him and his brother to some corps without pay, but furnish transportation and subsistence; transportation also for his collections and his paper, lately though these things are also sent by traders. The freight from here to New Mexico is high, but back it is much lower. —

If he is willing to go, I think I will not wait for your answer. I will lent him a hundred dollars, relying on your wealthy friends in Boston etc to refund the money; I have lost too much with Geyer and am always in considerable advance with Lindheimer so that I can not undertake more now from my own

pocket. I will fit him out with paper etc, and send him to the frontier, to make his way as best he can. In the mean time I will do what I can at the Leavenworth and rely on you to do every thing possible in working for him. The money advanced would be refunded after the sale of plants, or by sending pls to and seeds to. But in case of his death, or of the loss of his collections, or (which I do not fear) of his proving false, that amount would be lost.

His name is, if I am right, A. Fendler

I will write you again in a few days, when I have altered the matter a little more.

We had all our Cactus now in flower, Mammillaria vivipara (very near Pusilla) M. intertexta — M. applanata. The latter has a small insolute flower, intexta a large beautifully purple one. it is certainly of the finest Mammillaria. —

My leisure hours are few and will now, as soon as the box is sent away to you, be taken up with Hooker & Other's Cacti. I shall not have leisure to examine our botany this season in the field.

Very truly

Your

Geo Engelmann

... to may be properly divided into C. capitata & C. pilifera. Pseudocactus is no genus, & the other may be too good genus. Would not Opuntia be my name being used if it was not wrongly? I can not imagine what Epicactus is. ... Opuntium is generally distinct from C. curassica. ... Cactus is probably C. coryphora discovered on the ... a few years in Germany — from South America; & have specimens

Kunze says, he desires (besides many new exotic species) the following species of Carex:

C. Texana Dew — C. floridana Schw.
C. lenticularis Mx, if distinct from C. granularis
C. filifolia Nutt — C. Washingtoniana Dew
C. ollesta Dew — C. granularioides Schw (if distinct from C. ovata)
C. chewkeensis Schw. — C. albicans W.
C. Hitchcockiana Dew, if not oligocarpa
C. jussiea W if not brachystachys
C. Ellottii Torr. — C. ovata Rudge
C. miliaris Mx — C. acuminata Schw.
C. angustissima Dew (an good?) — C. laureata Dew
C. laxiculmis Schw. — C. Nuttallii Dew
C. Cous corvi Steudel. Drummond N. 432.

Besides all new species of Carices especially from the southern states.

If you or your friend could do anything in filling up this list of desiderata I will be glad to charge myself with the transmission of the specimens.

J. E.

A paper on three new, or newly described north American Isoetes species by Miss Braun (she is now Professor of Botany at Freyburg, Baden) I shall translate as soon as I get it; it is promised soon. She describes I. flaccida (Florida), I. riparia (Philadelphia) I. Engelmanni (Missouri)

Prof Asa Gray
Cambridge
Mass

St Louis July 3d 1846

My dear Doctor

About a week ago I answered both your letters of May 30th & June 8th and told you that I expected to engage a young man to go to Santa Fe. He has now concluded to go, accompanied by his brother. His name is Augustus Fendler, and he is engaged here in the business of spirit gas as the liquid is called here. He has been addicted to a roaming life from his youth. My own in regard to his wandering, he came to the conclusion that they might be made more interesting and useful if he had some knowledge of natural history, and about a year ago when he settled here, he applied to me for books on zoology & botany, and afterwards began to collect and examine plants, but I dissuaded him from his purpose to collect plants for sale in this region; I encouraged him to study botany more closely, and to study more especially the flora of this neighborhood, and collect afterwards in some distant region. This spring when Dr Wislizenus left here for New Mexico he wanted him to go along with him. But, though inclined to it, other engagements prevented him. So you see that the wish to go to New Mexico is not new to him, nor the purpose to collect plants and make a living by it. His original intention was to go to Santa Fe next year, till your letter was communicated to him and he resolved to sell out his business and go at once

to Santa Fe, provided, I would assist him with money, and would do all I could to sell his collections. In both things I must greatly rely on you.

He has come to the conclusion that he must have now about 150 dollars, to fit out himself and his younger brother who will go as his assistant. He will not rely on assistance of Government, at least in going out, as Col Kearney has left the frontier by this time, and as the baggage and provision transports, which may be sent after him, are all probably so much loaded that nothing could be taken for him. But should you be able to procure in Washington free transportation for him with such a baggage train, it would be so much better; meanwhile he will rely only on the trading caravans, and he must be prepared to pay a pretty heavy freight for the 15 or 20 reams of paper which he must take along, and for his other baggage which will be little, as also for his subsistence. He will not go to the expense of buying a horse, but travel on foot, which can be done easily, as the caravans generally travel slowly.

I promised him, the outfit of 150 dollars, which should be returned in plants etc by him, if the certain sale of 30 sets, and if his plants were well collected and well preserved, the probable sale of 20 sets more at 10 dollars a hundred, of which he would get perhaps $8. as expenses for transportation, [illegible] etc had to be deducted.

He expects to leave here about the first of August, and I hope to have your answer before that time, though it will hardly be possible to hear something from Washington ~~before~~ till then, unless you should have already taken some preliminary steps. But do what you can there, and as soon as you can! Even after Fendler has left here, something from Washington may reach him on the frontiers or on the prairies, of importance to him, or perhaps at Santa Fe – for he may count Government protection or assistance there. — I advised him, to collect as much as possible on one place, say Santa Fe, then go to another and so forth, and not travel about much before he has become more acquainted with the flora and has collected all the more common plants of one region.

I hope he will do well, but at first he will work slowly, till he becomes better acquainted with the business. As to the money advanced I have no doubt, that it will not be lost unless he should die etc. We must risk that chance.

I have given him my copy of your flora and of your textbook and must have another of both and anything else you may send for me, so please send me one of each by Mr Simm who has left here 4 or 5 days ago and will be in Boston shortly; you will find him at the same place as last winter, and may deduct the price from money which you will send for Fendler. I wish you could collect it from your rich friend in Boston soon, if not, I will have to bear a part of it; but I think you and I should

be exempt of paying money, as we have to perform a great deal of labour in the matter, and as we both, I believe, have it not very superfluous.

I have to day closed a box with plants, which I shall send to morrow to Mr J Carey Newburgh as the most central point. I shall request him to send to you the following packages:

1 for you, St Louis plants about 120
2. for you, Texas plants 1842 – 1844, such as you had yet received from me, to complete as much as I can do it your Texan flora, about 330 sp.
3. for you Texas plants, 1845 about 225, duplicates of all that Lindheimer has sent with his own numbers
The grasses in the 2d package I have also numbered and beg you to name them for me. I can do nothing with the Grasses as yet — having no work. — The plants of 1845 I request you to look through and tell me (at your leisure) which you know and which must be further examined, as I do not intend to go to the trouble if I can help it to examine carefully plants which have been fully described by others, — my leisure time is too limited for that. Lindheimers box, daily expected, has not arrived yet.
4. Plants for Mr Lowell about 210 specimens. I hope he has bought a set of Geyers from Wiley & Putnam. I wish he could procure me ~~a set~~ the publications of the New York Lyceum & Boston Academy — I would try to repay him in plants — besides your Bryography.
5 A set of Lindheimers plants 1843 & 1844 for Mr Lowell
6. do do for Mr Cleveland (those for S. Carey & Durand will be sent directly by Mr J. Carey.
7. 8. & 9. three packages for Hooker, which I wish you to forward
10 & 11 a set of plants for Mr Oakes (near 150 sp) and his set of Lindheimers plants
Please charge the different persons with their part of the expenses.
12. a number of Drawings of our fishes, with notes

which I wish you to send to Prof Storer to be used by him as he thinks proper, and returned whenever he has no more use for them. I should like much if he would name them, and communicate any thing he may wish me to do for him in that Branch, which shall be done — if time is left — a great desideratum with me now. — A copy of Plantae Lindheimerianae accompanies every set. — Brown has sold all the sets he had, but your catalogues reached him only in February through the post office, announcing them came to his hands in November.

I believe that is all I have to say at present. Over as soon as I have something to communicate. I shall get shortly a fine specimen of a Cactus from the upper Arkansas or Platte, a Cereus? and then describe that and the other new species from Lindheimer, which may be published in the Boston Journal — I know them all in flower now! and most of them in fruit.

Yours truly

G. Engelmann

P.S. write a letter with written instructions for Fendler how to collect especially live plants in that distance where transportation is so uncertain and freight so high. He will be slow at first, but do well after a while

It strikes me that possibly Sanders might leave about the time Fenian is ready to go, so it would be important if he could go with government transport — I dissuaded him from going next spring, as all the spring season was lost in that way.

Pay to Sergt
Cambridge
Mass

Recd 12. August

Alamo August 3 1849

My dear Doctor

I would have written to you long since concerning the shipment of the plants, if I had not waited for your letter about Fendler, this arrived on July 23d together with a letter from the Secy. of war to Gen. Kearney and with one from Mr Sullivant including $50.

As Gen Kearney has left the frontier a month ago I did not know better than to go with the open letter to Maj. Col Markey the quarter master at this place, I found in him a very polite and obliging gentleman who at once gave a letter to the Q. master at Fort Leavenworth under whose care those things are, and promised me that Fendler and his writer who goes as his assistant should be sent free of expense after the army, have a house to their disposition &c &c. Fendler left here yesterday for the fort. I paid him 50 dollars for his outfit and $120 from Mr Lowell, together $170 all he wanted for the present. I have retained $30, to pay for Sandweiner's plants &c. of which afterwards.

I was delighted to see with what promptness all acted, you yourself, Mr Sullivant, Mr Lowell, the Secretary and our Quarter master here, and begin to hope a little more from this country for science!! — Col Abert has sent nothing now the surgeon general to whom a friend here had written. —

I have given Fendler full written instructions, &c

I think he will do well, though may be at first rather slow as he is not well practised yet.

About a week ago I got a letter from Lindheimer, telling me that he had packed and was sending away to me several boxes containing 30,000 specimens collected this spring & summer, besides many old specimens single specimens etc. and telling me that they were as well preserved as when he even sent to me. — I expect them every day and long to feast on them! — Lindheimer also has an assistant and apparently a very industrious one, a wife! Still I hope that that will not prevent him from going with the army, but he should have the same facilities extended to him, that are granted to Fendler, passing with the officers or soldiers and transportation of his necessary baggage and first of all permission to accompany the army and make his explorations under its protection. I shall trouble you again for a letter to Mr Marcy about this. Tell him how grateful we are to the protection etc afforded to Fendler if you could request him to send the letter to me or still better to Mr F. Lindheimer, New-Braunfels, Bexar Co Texas. This settlement of Germans is near San Antonio, the rendezvous of that part of the army, which is to go up the Rio Grande as we learn here. Mr Lindheimer would find several friends in that corps of the army if as I understand the Illinois regiment are going that way. He I think would assist him in his undertaking. —

About 3 weeks ago I sent a large box per Express to Mr John Carey, and requested him to direct the different packages to the different addresses, and charge every one with his part of the expense. He was to send to you 3 packages for yourself, 2 for Mr Oakes 1 for Mr Cleaveland, 2 for Mr Lowell, 3 for Mr Hooker, 11 all together, which I beg you to send to the different persons. Yours are 123 spec. from here, 332 spec. from Texas, collected 1842 – 1844; and – – – from Texas, coll 1845 – nearly complete, this last, a few are unique, which I hope will be collected this year in numbers, but which in the mean time I beg you to return. Please to look through the whole Texan 1845 coll. and tell me something about the plants, so as to relieve me of the perplexing labour to examine carefully plants already well known. —

I have written myself to Mr Oakes (who never has answered any letters), and shall write to-morrow to Hooker.

I have sent sets of Lindheimer's plants to the following persons

No 27 to John A Lowell, Boston 132 sp. $ 10,56, say $ 10
28 to Prof P Cleaveland, Brunswick 126 sp. $ 10,08 say $ 10
29 to E Durand Philadelphia 125 sp. $ 10.
30 to Sam T Carey New York 125 sp. $ 10.

As to the latter I am not sure, whether he wanted this set or only the next collection; if the latter is the case

you will please take charge of this package N° 30 the only remaining one. — The 30 dollars returned from Mr Lowell's 150 will pay for these sets 27. 28 & 29; and if Mr Cary will return N° 30, you may send me occasionally the other 70 dollars; — Please to return to Mr Lowell then the 20 dollars you will get from Mr Durand and Mr Cleveland. — I have sent a copy of "Plantæ Lindenianæ" to the former, with the sets. — I have not written to Mr Durand, as he did not address me, but requested Mr Cary only to send him this package. —

In the package you will also get about 2 dozen drawings & sketches, which you please hand over to Mr Storer to name and use as he pleases, to be occasionally returned. —

— I was mistaken above; I sent also a set of Ericinæ N° 26 to Mr Lees, containing 138 plants, quoted at 11 dollars — he may pay ten if you think the plants are not worth more; — so that I have to get not 10 but 20 dollars from you, when the gentleman have paid. —

Mammillaria similis? is correct; it is the same as the similis of last year, both have flowered here.

M. similis var robustior is a distinct species, I believe to be called M. robustior. —

M. applanata is very distinct with its small flowers and M. intertexta has splendid violet flowers — rare for a Mammillaria! —

As to seeds, Mr Riehl, a botanist and gardener here informs me, that many seed vegetate only the 2d year, and that he puts always only one half of such foreign seeds directly in the ground, the other half he puts in moist ground in the cellar, in layers, and sows them only next spring. — He has found that among thousands of cherry stones for example, which have

been sent to him from Europe, only a few germinated, till he adopted this method, when, he says, he succeeded easily ever. — By the by, last year the Rishe has found the new Cycadeis, which you find in the charge (I think it distinct from Caucasica) — and this year he has found a lake full of Nitella, Beckii — and seeds! It is not far from here and I will try to get ripe ones for you. — wonderful plant!

I believe I have sent you a list of Carex desiderata, from Prof Kunze; and I shall be much obliged to you if you can obtain some of them for him.

I got the other day again a package from Europe, amongst other things, interesting Caricinae; and papers relating to Cuscutae; I am amused to see that the European botanists have been stirred up to the study of this genus. I have also Pfeiffer's paper, where he makes a third Engelmannia out of the Cusc. with capit. stigmas, and Evilinella out of C. Epilinum; Cuscuta proper he retains for C. European etc; I can not see how Epilinella & Cuscuta differ; if they form genera we can divide every genus in many new genera! — the division is better, but the name not admissible. — He wants to make Cuscutineae a new family coordinate to Convolvulaceae, especially on account of the Embryo, also the aestivation. What do you

say to that? I should think that none of these parasitic spotted (the plants should form distinct families — Thus we have the Orobanchaceae monotropaceae etc. — They should be only an appendix to the others. —

I send you occasionally Oersted's papers on Isoetes from the Flora, and a translation of it soon from Linnaeus Journal. He describes there 3 northamerican & two european species. —

Klotzsch's fragments of Cusuetae of the Berlin herbarium have arrived. They are sufficient for the most part. They are interesting in many respects. For the flora of North America, because they contain the original sp. of Degrosch; his C. coronata is as I suspected C. compacta, and his C. convexa is C. pentagona. K. has also sent me a pamphlet on Cladonia by Flörke for Mr Tuckerman. How send it to him?

I have received Kunth's work, as far as published; and wrote for Desvaux 10th vol.

You propose to publish an acct of Lindheimer's Coll before the distribution — I would agree to it, will it, if I could possibly work at it this summer; but my leisure hours are few and far between, since Dr Wis's (yours, of whom I have nothing heard yet) has left me. Medical practice takes up all my time or at least eats it up so that little is left for botany — and all what I can I must devote to the Cusuetae at least to Hookers Collection so as to be able to send it back to him! But I have not yet been able to begin! I am half afraid to write him that. But it is impossible till I have time to do much, if anything. Now Lindheimer's new plants are expected daily, and will require again some time to arrange etc and so it goes on, till practice of med. becomes a little more lucrative.

If I understand you right you will give to Mr Lowell a set of Geyers plants in my name to go with the 210 Spec. which I have sent him from here, and for which he will send me some genera. — I am much obliged to you, and approve it entirely. — You say you will have the fishes and the publications of the Newyork and Boston societies for me; for which I am very grateful; but to whom am I indebted for them?

To yourself I owe many acknowledgments for Flora & Textbook. I have presented Kendler with my copies in the name of all his constituents if I may say so.

I have never seen Collinsia violacea, so I can not send you specimens.

Do you know any thing of Mr Gambel, a young naturalist from Philadelphia, who was here to me

recommended by Nuttall & by Morton about 6 years ago. He was then on his way to Santa Fe & California, and must now be back in Philadelphia, as I see papers of his on the Botany of California. Has he done any thing in Botany; has he published any thing? Did he stay any time about Santa Fe and which route did he take? He must be the only botanist who was ever there.

Tell me if there is any thing improper in sending the large box to Carey? I thought it cheapest & safest so, than to send small packages to the different persons from here.

Dr Asa Gray
Cambridge
Mass

many Lindheimer seed, sent a year ago, was a Penstemon, supposed to be a P. Murrayanum. I raised a plant from it & it probably is, but has not yet flowered; but our Riehl has got quite a different Penstemon from it, which is unknown to us. It has been in flower this summer.

Very truly yours
G Engelmann

St Louis Mo Sept 1st 1846

My dear Doctor

I have got your letter of Aug 12th on the 20th. I was busy then in arranging Lindheimer's plants, received a few weeks ago; and send you now your share, a complete set of all species, received new and old. Includes you get the receipt. — A few days ago I send you the desired seeds of Melanthium. — All the books sent by you have arrived; my thanks for the Flora & textbook. I was disappointed by not getting your Gramineae in the N York Journal, I thought they were included in it. —

I send with Lindheimer's plants the fruit of your two Spargania; do you know the species of that genus by the fruit? I find it nowhere mentioned and here in these two at least the difference is very remarkable. — I also send you my new Cholepias, my only specimen (to be returned); but perhaps it is not new to you. — I had sent to Dr Torrey a description a year ago, and drawing.

Now to your letter. I don't understand your arithmetic: there were 4 sets of Lindh. plants (Lowell Cooper, Cleveland & Carey) small parcel, which can not cost more freight than 50 c. each, if the whole box cost $10. — and I (or rather Lind.) have to bear this expence, viz $2.00; all the other plants for Carey, Curtis, Philadelphia, Lowell, Dr. Hooker & yourself were inclosed in two packets

by me. — But perhaps you consider it proper to send those things, to Hooker free of expences, and in that case, your calculation may be correct.

I must charge Lindheimer with $2.00. I have to pay $1.00 on parcel from Hooker, and must bear $4,37 as charges on parcel for Hooker. But I find this sending by Express, at least such a large box, rather too expensive and must [illegible] a cheaper mode.

Mr Lowell has advanced for me $34.81
he has got Geyer's plants $6.00
Lindheimer's $10 56
210 specimens from me à 8.00 16 80
33.36
I am in his debt 1.45

and shall send more plants from here, if he likes my specimens, as also Lindheimer's. From him I wish to obtain your genera americana, and other things of the kind. But besides this I have retained, as I wrote you, $30 of Mr Lowell's $150; of these 25.75 ought to pay for Miss Oakes, Cleveland & Carey = 31,12 — 7.37 and the balance $6,25 I remain indebted to you or to him. 6 25 + 1.45 = $7.70 would then be my indebtedness to Torrey at present. — Mr Durand has sent me ten dollars directly. —

All the sets of Lindheimer are now sold, at least all in this country and England; there may be some 2 or 3 more in Germany. —

Expenses [illegible]	30 —
Mr Lowell's cash	34 81
Mr Lowell's charges	7 37
Pay for parcel of plants	72.18
Cash from Mr Durand	31.12
Cash for plants	33 36
	64.48
Cash by me	7 70
	$

You will find full copies or rather translations of Lindheimer's labels with the plants. Many of them are the same as last year, better specimens or fuller.

I told you that Fendler left Fort Leavenworth about the 12th of August, with Col Price's Regiment of Cavalry Mo Volunteers. — I dont think it proper to trouble F with too many orders; if he wants to collect too many different things, mosses, lichens etc etc besides the phanerogamous plants & ferns, he will get bewildered. But mosses he must collect, and has been instructed by me to do so. About lichens I will say nothing at present, till I see how he is doing.

I have got a letter from Dr Wislizenus from Santa Fe; he has sent a box with mineralogical, geological and botanical specimens, but it has not yet arrived here. He is gone to Chihuahua. We will see how Fendler acquits himself, before we charge him with more labor.

When do you want the Cesnoline? I could do it soon, and send you a synopsis, but I should like to ascertain some facts about the synonymy before; for example: I know now what Beyrich's specimens are: C. arcuensis is my C. pentagona; C. ovinata is = C. compacta Duss. — and C. mollissima is probably my C. Coryli (but the fragment from Berlin is too incomplete, to decide fully) — Hooker has sent me no North American Cesnoline. — Among the Berlin specimens is no C. umbilicata Fendler,

so that I shall not be able to decide about the identity of Torrey's Plant (for names) and Humboldt's — but I should think that they must be different, and I would prefer to give Torrey's another name. — I have a fragment of Wildenow's C. Gronovii, which appears to be my C. vulgaris, the smaller form; can you lay your hand on Rio. & Schultes, 6. p. 205 (Choisy cites: R.&Sch. 6. 205) if so I wish you would copy what is said there for me. — On my specimen there is no Corolla mentioned; but I shall write to Hooker for it. — Now: shall we adopt those names: Gronovii cumbrosa, arvensis, or mine, arvensis is a good name, from what I can learn about the habitat of the plant; but cumbrosa is not. — and shall I also suppress my names Cephalanthi, Saururi etc? — What say you?

I have obtained some Cactii from Mexicans Echinocactus uncinatus (called by me so, because I dont know any other name) very near my setispinus, found by Lindheimer — also near San Antonio is varion on the Rio Grande, Mammillaria applanata grows finely there — and globose therefore my former name must be abolished, but I have another one already: M. laetesvens! for this Mammillaria (Rio Grande and Pierredales specimens) exsudes, when wounded, a milky fluid like Euphorbia, which thickens; strange for a Cactus! Opuntia fulgesvens is also there; several other large opuntiae, which are also cultivated in Gardens. — besides a Cereus 10 feet high with large white nocturnal flowers, and very

2/

large scarlet fruit, and large black shining seeds (which I have got) probably Cereus Pitaya; — Also some Mammillaria perhaps similis; this is all what I have seen from there. — — Do you obtain any thing from there? Also Eth. Lindheimer! —

I have written to Lindheimer and included letters to Gen Shields (Illinois Vol) and Gen Wool the former I know well, but learn now, that he has gone to the Rio Grande, not to San Antonio. — The former I know not. — My letter will reach Lindheimer towards the latter part of September and I think it will be too late then for the expedition. —

We must not begin to print and distribute Lindheimers Collection of 45 & 46 before his fall collection is in. —

I am delighted with Stevens work and shall write to him soon. — I see that he knows very little about the Mus. ipsi. fishes, except through Lesueur. (though they are the most extent same as Chic. fish.)

Cereus vespitosus (Hooker says it is synonym with C. pertinatus (first described as Echinocactus pertinatus) — is very variable I can not discover a specific difference between my plants of 1844 & 1845; among the latter again are several varieties e.g. petals cuspidate, petals acutate, and perfectly obtuse petals, narrow & wide; spines weak & strong etc. aspect green or gray — those of 1845 were

at Cayen, that of 18th appears to be the most northern form. —

The new Corydalis has pale yellow not white flowers & erect fruit, I noticed some specimens of our C. aurea (always smaller and more glaucous than the eastern form) with some of the flowers quite as small (abortive, similar to the fertile ones of some Violae ?) but always only a few on a plant, generally not different from the common form. —

What shall we do with Rafinesque's Cuscuta, if for example his C. pandora should prove to be Chorisp. glomerata (my Lepidanche)? shall we adopt Rafinesque's name? — I should like very much to see Raf.'s specimens?

Did you raise many of Lindheimer's seeds? the Cucurbitaceae ? I have the Cassia occidentalis growing and a mimosa (Acacia?) Rudbeckia, Polanisia and a few others. —

I have no other specimen of Pentstemon tubaeflorus, which I have collected in western Arkansas and in Northwestern Missouri. Pentstemon gracile is unknown to me. —

Professor Engelmann finds the average elevation of Barometer at Santa Fe between 23 & 24 inches, the elevation above the sea therefore something like 6000 feet. — Mountains in the neighborhood said to be 5000 feet higher. — It is remarkable how gradual and constant the barometer is observed falling in going to Santa Fe. — The boiling point of the thermometer from Boston have also been observed regularly, and appear to correspond well with the Barometer.

(Lindheimer Coll.)

— You will find my labels rather short — and I must explain them. S.A. means San Antonio. N.Br is New Braunfels a German Colony 20 miles from San Antonio, on the Comale Creek which empties into the Guadalupe. — Cibolo is a small stream between New Braunfels & San Antonio, Piedernales another one further west or S.W. west. — The geological formation is Cretaceous, — but as Dr Roemer writes me somewhat different from the New Jersey etc formation. — 4/46 means 4th Month, or April, 1846 as usual.

His remarkable heat influence the dry season had on our vegetation: my little collection (is it known to you?) and Cyperus dominatus [illegible] entirely where they were abundant last year. Alisma rostratum, which covered acres of ground last year, exists only in few insignificant specimens; even the common Cyperus castaneus is rare. —

— I try to find time to collect our Sagittarias in fruit; for that will be after all the best way to distinguish them. — We have 2 or 3 distinct species, one apparently divious, the other monoicious. All probably are stoloniferous! — — You should get your friends to collect your species also in fruit, — and I will obtain fruit of the European plant, as well as of the European Sparganiums.

I send in the box the Pamphlet from Klotzsch for Tuckerman and a paper on Cuscuta and another on Isoëtes; of the latter I will procure

a translation for Silliman's Journ. as soon as I can gather some additional information.

What sort of a man is Dr Thurnstein, & did he sent him on his request a set of duplicates some 3 years ago — but never heard from him since.

Very truly yours

George Engelmann

St Louis Sept 2d 46

Mr Asa Gray
Cambridge
Mass

I find in the Boston Journal a note on Echinocaulus viridescens V pag 293
Is there not a mistake? Is there a woolly head but small & depressed?
Is this not exactly as in E. lachnanthes — to which is the spines appear to resemble. — Do you know the specimen? I wish you would compare it. — "No cactus has, I think, the pinnae in the centre of the pencils of spines" but on behind them" or in their "axilae". It appears to me by no means "clear that this plant must be restored to the genus Melocactus"

St Louis Friday 31 July 1846

Dear Doctor,

[illegible] if [illegible] Year

St Louis Octob 18th 1846

My Dear Doctor

This is the last sheet of letter paper I can find in the house on Sunday evening when no other can be got; so I use it. I was much pleased to get your letter of Octob 8th as it announced the safe arrival of the box. — Before I answer your letter let me request you to send the papers included together with the letter to Silliman for publication in his journal. If I had received your letter sooner I perhaps would have sent the article on Asclet. ct to you for the Boston Journal; but as the paper on Equisetum has been published in Silliman Journ. it is but right that this should follow there also. I hope they will insert the little woodcut. But the principal reason why I send all to you and give you all this trouble is, because I want you to hunt up if you can a description of the south-American Marsilea polycarpa Hook & Grev. probably in the Icon. filic. All I know about it is the accidental mention of it in a letter of Braun. If you can, at a figure & description, I want you to alter the closing paragraph, and say whether the Texan species is identical with the south american one or distinct from it, in which case also the name on the woodcut has to be altered. I got from Lindheimer only one specimen with fruit — so you have probably only a sterile specimen, but as he is coming in the region of this plant this fall again, he will try to find more, as I requested him. —

My last letter from Lindheimer is from the beginning of September; the [illegible] from in San Antonio, but he did not appear to have any notes to accompany them; he had not then my letters, which must have arrived much too late. Letters between here and there are always one month on the way. — He wanted to take his summer & fall collection himself a la Mexicanos in November, collect there a little, and send it off. He also wanted to collect living plants for you there. — I want to make him go to Chihuahua next spring, if the troops are still there then; that will be a better season.

I have a letter from Dr Wislizenus from Santa Fe; he has collected a box full of plants & minerals for me, but the traders who took charge of it, forgot it in Santa Fe !! It can be recovered perhaps. He went from there to Chihuahua. — Fendler is with Col. Price's Regiment Mo Volunteers and must have got to Santa Fe by the middle or end of September, no news of his arrival yet. — Gen Kearney's troops admired the richness of the flowers in the mountain gorges north of Santa Fe, and detested the abundance of Cactus !!

From Matamoras we have here 9 or 10 species of Cactaceae, probably mostly known ones; — but I have no work to study them. — There is a great deal to be done yet: I have the seed of one, perhaps Cereus Pitahaya, which germinated with large foliaceous cotyledons, like an Opuntia ! —

The examination of Sagittariae is interesting; but we should have the ripe fruit ! I have come to the conclusion from the examination this fall that we have here 3 or 4 species; that S. obtusa is nothing but our american S. sagittifolia, with its numerous varieties, but that the european sagittifolia is a different species, with purple base of petals etc. It may grow east or north, but not here ! — I think the genus intermedia between Alisma & Sagittaria is a good one, and must be maintained, but my name Helanthium must give place probably to Echinodorus Richard as I conclude from Endlichers remarks. E. = Alisma ser. polyandrae. — Can you enlighten me about it ? I will study this family closely if I can get material enough and send you my notes for publication. But it is with this as with many other things — I am here so far off and can not compare books and collections ! The same with Sparganium ; I know now two species here, but can not determine which is which, simplex, ramosum & americanum ! However I shall study them next season also in flowers, and try to get fruit specimens from Europe also to compare. — My notes may be interesting, perhaps even important to others, like you who study our plants with a complete material and books; but they are too fragmentary to be published. However if I have any thing fit to be published, I shall do it. —

Before I come to answer your letter, I must tell you that I was surprised and delighted to get in Lindheimers last letter a gigantic Cassuta, stems like middle sized goose quills, climbing even on live oak trees 25 feet high — and in every respect the american representative of Cuscuta monogyna !!! Is that not fine ! It may be called Cyanostyla. —

— I have collected the ripe fruit of Sidewa Berlii, difficult to get as it falls directly in the water. It belongs rather to the second

A myosotis, received from Chapman is my M macrosperma for Texas, published in plant Geyer.

section of Bidens. —

If you see Agassiz tell him how glad I shall be to meet him here! 14 years ago we have spent a few months together in Paris, I have not seen him since. Tell him that I have received the package of plants he had in charge for me but not the letter from Braun which also must be in his hands. — His wife is a sister of Braun, and A & B have been intimately connected in scientific pursuits though generally in different fields. —

Lupinus has been in full pod since spring 1845. I has only come up this summer! — Lavia vespertilio n. sp. (1 pair of cuplets) has come up and though a perennial, has flowered already — always 7 fertile stamens, 5 coloured, and the lower the largest; petals pretty equal & regular, crenulate. I include a copy of memorandum sent me in your letter of Aug. 12

|| Result: You owe me 23.75, and I owe Lowell $31.45. — If you happen to get to Poppig's please pay it to them for me; if not wait till you collect more for Lindheimer. — I wish you could get Lilley & Putnam to settle with me. I have never got them to a settlement, though I have written to them several times about it; last summer again. I do not know even, whether they have sent 8 or 10 copies of Geyer's Illin plants to England, as Hooker and I have desired them to do; H. says that he will soon be deposed of there. — I should like to get the thing entirely out of their hands and settle the small bill they have against me; I am afraid they will make me pay enormous charges, commission etc. — I wish you would take all the Geyer's sets still in their hands under your charge. — They have also since last February a parcel of Plants for Mr Buckley from me which has never reached him. Could you find it out? — Much trouble for you — but as you come there undoubtedly, you would oblige me much by looking into this. —

I am not of your opinion that Lindheimer's collections of 1845 & 6 should be published separately; I would prefer to put them together and wait till all is in my hands & yours, which will be about Nov 1 year. Then there is another thing; many of the good things of these collections are only in small number of specimens there, and in not in distribution; they can not get numbers therefore! (for they are made in the same region and frequently the roll of 1846 completes that of 1845) But I still think it proper to publish all the new species in the collection, though perhaps not for distribution — that must be done in notes (as the Cactaceae in first catalogue) I think we should even add the few new things in the old Houston collection; on that account I have sent you all those also; for example Polygonum texanum. N.B. I have now observed no middle forms between Polyg. aviculare asserit. & P. erectum — they are easily distinguished but P. ramosissimum is a good species. —

I will have to give you the numbers of those species which are in sufficient

quantity to be distributed. — I am very much disgusted that I can not think of helping you much in the labor of the texan plants, but I shall have labor enough in distributing the sets, and then all my leisure hours must now be devoted to the study of the Cuscutae. I am ashamed to think that I have Hooker's now 6 months and nothing done!! — And shall get soon now those from Munich, Vienna etc! — I keep a table of all sets of flowering plants & know which species are wanting in each set of the texan plants, so that I can supply from the collection of this year for example Bravoria and many others which were in small numbers in the first collection. I dont think I will give the same species to any one twice, if the specimens are not very fine or remarkable. — I shall make 40 sets. —

<u>New Cuscut:</u> Boyer's C. minor is adopted by Hooker and is according to a Berlin specimen my C. Gronii — but has the name of C. arvensis been published anywhere? Hooker gives it as synonym of his C. americana. Still I like the name and will adopt it; but Umbrosa I dislike, and dont want it, if I can help it. — I find that other botanists allow the names given by them frequently; e.g. Cerus inscriptus Lindlyk was allowed it to C. pterantherus Link, and afterwards by the same allowed to C. nyctiscolus. — A Cuscuta with capitate stigmas probably from South America was found in Mediterranean fields in Germany; Reichenbach called it C. hassiaca — he found the name improper and allowed it to C. nigrans; then Engelmannia nigrans; Desvaux called it C. nauseolens and Rafinesque called Engelmannia nauseolens!!!

(by the way what do you say of dividing Cuscuta into two large genera, with filiform stigmas & caps circumscissile & capitate stigmas & caps baccate? — the other genera of Bindweed inadmissible) — I therefore shall be justified in suppressing the name C. lupulaeformis etc. — those names are eyesores to me! — I am uncertain whether C. umbellata of Thurb & Torrey are the same, but doubt it; still I think the name must be admitted with an ?. The name of C. gronovii must be adopted, as my specimen from Wild Oat, Berlin is my C. vulgivaga, eastern form; I am sorry that I can not ascertain from where Wildenow's specimen comes. —

I now have answered your letter fully, and given you the few obtained things of interest at present engaging me. I hope you will find the letter not too badly written. ——

N.B. I should like to publish in a notes to Lindheimer's plants such new plants, perhaps, as I have, e.g. my little Allisma (Helanthium) my two Cyperi, all of which I have sent you this morning. But I want to have your opinion first. — The Cyperi have been collected again this fall, also fine specimens of Syp. acuminatus; but the Helanthium I could not find again in this dry season.

Very truly yours

G. Engelmann

as I hope I shall, a good supply of Cactus etc from him this winter, I shall send you enough of it for you & Mr Lowell, and draw on you for $75. — That is right, make the rich help a little the laboring poor, who give their best exertions and in fact their whole life to the advancement of science, without any adequate (external) reward. —

You would do well to keep or make your gardener keep a list of all the plants, which grow with you, so that it is unnecessary to send them again, except you want many duplicates. — Guara parviflora, G. longiflora, Helianthus lentiolaris and others have been in flower here, but ripened little or no seed; Lycium carolinum Bonidium fruticosum, Malvaviscus Drummondi etc I have had several years in flower. — Pentstemon Murrayanum vegetates well, and I hope to see it in flower next season. —

To morrow a young man from here leaves for the east, and I will try to make him call on Wiley & Putnam and on you, and enquire, if you or they have something for me. I have nothing particular to send at this moment. — A few specimens for you will go with the next set of Lindheimers Plants. —

Now for a few notices about my trip to our mining region a month ago. — The vegetation is very much different from ours here, but in many respects

apparently analogous to the vegetation of the hilly country of Kentucky, I think. — ~~Among~~

The geological formation is a dolomitic or magnesian limestone, containing the lead ore, overlaid by a sandstone with highly siliceous or cherty beds, including in some places coppery & other Iron ores; on top of this is our St Louis Limestone, belonging to the Carboniferous formation. In the south part of the State this magnesian formation, appertaining to the Silurian Epoch is deposited on (or penetrated by - it is difficult to ascertain which) porphyritic, pseudo-granitic and syenitic rocks, including some inexhaustible ~~deposits~~ masses of Iron ore, especially the famous Iron Mountain and the Pilot Knob, the latter the highest point in Missouri, about 1500' above the ocean; with naked rocks of nearly pure Iron ore on top, 30 to 50 feet high! —

In the region of the sandstone & chert above mentioned, Pinus virginiana? is predominant — The other trees are about the same as here; Alnus & Hamamelis are common there on creeks, but not found here. — No Vaccinia, no ericaceous plant at all here! except Monotropa! — but there are probably 4 Vaccinia; especially on the Iron & Porphyritic Mountains, — one with leaves 3 or 4 inches long appears also a Vaccinium. — Among the more common plants, which grow there but not here is Cimicifuga racemosa; Parnassia caroliniana; Aquilegia canadensis; Isopyrum rapillaire, Ranunculus recurvatus; Aster ptarmicoides, Lespedeza hirta, Eryngium aquaticum, Rudbeckia speciosa, Coreopsis lanceolata, Ostrya virginica — Euphorbia Peplus and ~~americana~~ non L., biennial or perennial?

Many southern plants extend there, which are not found here; as Andropogon argentea? & virginicus; Aspergula Cynanchica Andrewsii; in one locality, on the Iron Mountain, Eriocaulon decangulare, Trichostemma dichotoma — Panicum hastatum & ovatum. A Solidago is common about the Iron Mountain, which is very near S. pulverulenta (ex descript) but scales of involucrum always obtuse, oblong-linear. I index lower leaf & flower. Coreopsis carolinana —

Rarer plants, common there, is Aster oblongifolius, Aster anomalus, Solidago petiolaris β. squarrosa (also here) — On the Iron Mountain & Pilot Knob Galium latifolium β, which I have found in N West Arkansas & near Little Rock. — Cuscuta Coryli, and Common C. adpressa. Vernonia arkansana — Polygala senega var latifol. — Solidago Radula. — On the Rocks on top of the Pilot Knob large bushes of Hypericum proliferum; can that be? Here we have it only along streams. A Remarkable feature in this country are the naked rocky nearly level places, wet in spring but very dry throughout the other seasons. You are always sure to find interesting plants there, and many I have found only there; these places occur through the whole dolomitic region; the rock forming them is called here rotten limestone. The Bumelia mentioned formerly grows on such places, and I have collected seeds enough — Leavenworthia; Hypericum sphaerocarpum, Oenothera missouriensis, Lithospermum tenellum, my Sida calycina (yours, but probably not Punk's Sida hispida) Acalypha monococca, Croton elliptica & capitatum. Anemone cylindrica, Aster oblongifol. Verbena Aubletia & angustifolia, a Micromeria with creeping sterile stems & orbicular leaves. — Some at least of these, and mostly a majority of them, you always find on those barren treeless spots; I recollect them well on my journey to the South west, 10 years ago — they always offered a fine field and in the proper seasons I have no doubt, a number of other peculiar plants grow there.

On a porphyry Mountain I found with Coridyo Radiata a Phlox in full bloom (Nov. 4th) similar to Ph. aristata, but shorter & larger in all parts on the same place several Asters & Verbena Aubletia were still in bloom, —

On Sandstone rocks near Maine Ca Motte Iperica, Tabinum, Lycopod, repestre, Polypis capillaris, Crotonopsis, Polygaterum, Asplenia primatifida Saxifraga virgin? some other ferns, Aspid. marginale, Aspl. melanocaulon ebenum etc.

Prof Asa Gray
Cambridge
Mass

I have just received from Sartwell Nov 27
Nothing much of

Anything for me give soon to Mr Joseph Whitney & Co Boston where Mr Stinde, Clerk of Th. Kimen from here will call. Direct it to Mr Kim

Yours very truly
J Engelmann

You will easily distinguish both species of Echinocystis

St Louis Dec 10th 1846

My dear Doctor

yesterday I received your interesting letter, and answer you directly. I would have written sooner but wanted to finish Cissoniae & send it along. from your letter I see that there is no haste necessary, as you only speak of appendix to Compositae of Flora, and nothing else, so I write here again before sending the manuscript, this is done and would have been sent if fortunately a letter from Lindheimer (Nov 19th) had not reached me about a week ago, including ripe fruit of what I had called before (in my letter to you of Octob 19th) Cuscuta gymnostyla: This is certainly the one mentioned by Dr Wright, who describes the scales correctly but strange to say does not mention the united sty[illegible]! The strangest thing however has to be told yet: The capsules open by circumscission!! and the whole plant is very little different from Cuscuta monogyna!!! but styles capitate, depressed! what say you to that! It is not an analogon in the american groups, but it is its true representative, and the only American Cuscuta with circumscissile capsules!! — I confess it bothers me; I had arranged the american C. in the genus Lepidanche: stigm capitat, caps. not opening and the others in Cuscuta: stigm elongate, caps. circumsciss — I am pondering and studying now whether we should form a third genus: stylis connatis stigm. abbreviates, caps. circumsciss: (4 species: four texan, 2, both in europe & Asia, one in Afghanistan Mr Hooker has already more elongate stigmas) I have begun to study Hookers Herbarium very diligently now, and find more puzzles in the east indian C. reflexa & macrantha, which

have styles partly united and stigmas elongate, acutish! And — a new feature, the large corolla is deciduous! not remaining on the capsule#. — There is a new type for a genus — and we might form perhaps still more — or be forced to unite them all! — These questions I would have all till I have studied all specimens in my hands — if I had not to hurry a decision on account of Flora, let me know therefore positively when you want it. It can be ready any day, as soon as I decide about the genera. —

I have united several of my species: neuropitala & hispidula, appressa & compacta — pentagona & vermrosa = arvensis Bayr. — Beyrich's C. umbrosa is according to original specimens = Berlin from Georgia my C. Coryti — but I can not adopt Beyrich's name — I could not unite Gronovii & Saurii, though they ought to be perhaps — I can always distinguish them so easily here, in the field as well as in the herbarium. —

I have not seen ripe fruit, which is important; if it is Cocorate, as Chrisy says (i.e. indehiscent) we have certainly a fourth genus; but Chrisy is no authority for me; Hooker describes Cuspidata from specimens cult in Edinburgh, in Flora exotica t. 150 can you compare it? But I trouble you with so little time too much. — Cuscuta is entirely analogous to Convolvulus; if we allow the number of genera in Convolvulus we must with equal justice divide Cuscuta.

The Vienna & Munich collections have not yet reached me. Atamo Cuscuta reflexa & macrantha compare the Cit. t. — Chrisy manages or DE Candolle. As they have cultivated it in Edinburgh they ought to know the ripe fruit. Edinb. phil. Journ. Jan. 1825 p. 172 — Sw. Bot. Mag. t. 6.

I know that I have copied the full labels of this year's plants of Kleinheinz, but I not recollect, whether I have given you all the information I possess about those of 1845 — let me know; if not, I must send it yet.

This is according to the sp in Hook Herb not different from C. grandiflora Hall but one canadian spec. in H. Herb. under the same name is different — but unfortunately very incomplete, whether the original description of Rafin. will decide, I do not know. — Doubts of this kind, I fear, will come many.

I have sent to Wiley & Putnam in 1843 – 17 sets of Geyers Plants, and requested them in my letter of August 26 1843 to sell them at $6.00 – If he delivered to you 10 he can not have sent any! or at least many to England. –

NB. Can you tell me which Cuscuta Vahl meant in his C. monogyna? There are two distinct species under this name, one from Silesia to the Altai, and one the from Portugal, south of France, Caucasus to Afghanistan. – If he meant the southern form, the northern must retain the name C. lupuliformis of Krocker fl. Silesiae.

I doubt whether any sets were sent to England. I requested them to sell them at 6 dollars, and they must deduct therefrom their charges. I do not understand the letter, when the clerk of W & P says: Dr E never informed us the price we were to pay him for those sold. – Did they sell them at a higher price than six dollars? They have sold 7 sets and must know what they have got for it, — the price is very low and if the charges are high, there will remain very little for me! — — Enough of it, it was a bad speculation! Mem. [illegible]

I have in our Flora 3 genera of Cuscutae; the imported Cuscuta Epilinum (Epilinella is no genus at all) Lepidanche most of our species, and ——— comprising the large Texan species and C. monogyna. The stigmas of the Texan form are depressed capitate, of C. monogyna, both forms globose inclining to conic, and in the Afghan species cylindric! But they all belong together by every lines of nature. Pfeiffer says that in Engelmannia (Lepidanche) the capsule opens at

top; but it is no real opening — though certainly a hole is found between the styles — but only a separation of both carpels at top, by which the upper part of the septum is divided, but the loculi never opened. — I have found the same in some European specimens.

I think we must maintain Richards Echinodorus, altering the character a little, and include all Alismae with carpellis capitatis, petalis imbricatis, nervis costalis e.g. A. natans, ranunculoides etc. — Alisma would comprise only those carpellis verticillatis, nervis dorso 2 carinatis — and Sagittaria is monoicous or diocious and has nuces carinato-alatas. Alisma has 6 stam, Echinodorus 6 — 21 or indefinite; and Sagittaria indefinit.

I had sent to Prof Torrey my two new Cyperi, with the expectation that he either knew them or could describe them. As he does not appear to do it, I shall send you a name and description. You have already specimens; I have collected both more more abundantly.

But I write you a good many things which at this time can be of little interest to you.

Lindheimer got Alerts note long after the army had left San Antonio, and concluded not to follow it so late in the season, and I think he did right. He will go to the Mountains on the upper Guadeloupe, if the Indians permit all next season, and expects a richer repast of new things there than on the Rio Grande. — Are you aware, that in Bonn, Germany a society has been formed for the exploration of the nat. hist of Texas, which will publish large work, 5 members are to go to Texas this fall, and spend 3 years there. — We must keep ahead of them!

Very truly yours

G Engelmann

St Louis Dec 31st 1846

My dear Doctor

You must excuse my last letter, sent about a week ago — it was written in great hurry and very confused. I have to write you again, and will try to be more logical. First: I believe I have not mentioned in my last, that I have heard from Fendler, today I got a second letter from him, from the middle of November: he left the frontier in the beginning of August, had a government waggon for his use, but had to find his own provision; had a good deal to do with cooking commodities, was sick with intermittent fever, was kicked by a mule etc, and collected therefore very little on his trip. When he reached New Mexico snow was on the mountains! — He has since collected 10 or 12 species of Cactus & their fruits, some flowering plants, many seeds, and lichens & mosses, as he says, but can not send anything before spring, as the communication is nearly interrupted on the prairies. He studies this winter your textbook & flora, as well as the country, language and people, and will therefore be so much more able to begin early in spring. I am therefore not sorry that he must be there some months doing nothing, or not much. If he had left here in spring, he would have lost 3 months of the most valuable time for collecting.

The worst thing is the incredible dearth there. He gives a few items: Coffee 50 c à ℔. Sugar same 1 bar of soap 50–75 c. 1 ℔ Lard 37 c. 1 ℔ Tallow 25 c etc — Cattle can not be fed and is dying of want: even government oxen etc. — He thought of going

in the country, but troops of soldiers have been sent every where, where any nourishment can be expected! — Boxes to pack up things are almost impossible to obtain; they — i.e. old boxes of merchandize — sell at 12½ c per ℔ !! and the coffins for the volunteers, which die in great numbers, are made of the planks of the boxes of government waggons. — He would do anything to earn money, but there are so many idle hands that labor is worth very little there. He asks me to send him sulphur, phosphor etc, to make matches, as he thinks he could in winter make money enough in that way to live through summer!! — At the same time he asks for more paper; I shall send him all these things early in spring. — Under these circumstances he will not be able to make much in collecting — and can at all events not expect any remittance for things sent before 12 or 18 months. Could we not do any thing more for him? Would it be advisable to ask such persons as Cabot, Lowell etc again, before they see any return made for their previous advances? — There is no hurry necessary however, as he has money yet for awhile, and as I will send him early in the spring at least 50 dollars myself — meantime we may see how he goes on and how things turn out in Santa Fe. ——

Second: Last summer I sent two boxes of plants to New Orleans to be shipped to Bremen; I just learn that the ship (?) Norfolk, which had them on board, was obliged to go to Boston, leaky or damaged. — Could you learn (by a note dropped to one of your mercantile friends there) whether goods were damaged, or what has been done with them? — One of the boxes contained the Cuscuta of the herb. of Neufchatel, which had been sent to me for inspection — it would be most disagreable if they were lost or spoild. If the things have been left in Boston I wish you could learn their condition, and what would be to be done with them. They were insured.

Third: In progressing with the study of Cuscuta I become gradually convinced that they can not well separated in different genera, however we shall see. I have now: 1. Stigma filiform, caps. circumscis. Europ, mostly
2, Stigma filiform, caps not opening, a new sp. from Afghanistan
3, Stigma capit. caps not opening America to
4. Stigm. capit. caps (irregularly) circumscis. of which I have now two species, East indies, & Mesopotamia
5. Stigm. elongat, styles connate at base, capsule? corolla deciduous — C. reflexa & grandiflora, East indies
6. Style united, stigm capit or elongate, caps circumscis (C. monogyna etc

Perhaps the forms from South Africa, or New Holland (I have more from there in the last of Hooker's Herb) offer still other types! A letter from Klotzsch yesterday included Cuscuta Monilata thinks 2 or 3 flowers, which I have to return! He says Kunth, from whom he obtained them, is a most unkind person to deal with, and it cost him some trouble and disagreable feeling to obtain it. I shall examine it carefully, before sending you the N. American Cuscuta. It looks much like Torrey's plant! — Klotzsch says

that two new east indian Cucurbitae are described in vol 20th of Lin. transactions by Edgeworth. but nothing else. I must get all the literature, and shall send to Europe for these things, get copies of the plates etc. — Some difficulty is also to ascertain which are the plants originally described in my authors — which is Vahl's C. monoyna, under which name I know two species, which is Roxburgh's C. sulcata — under which name I have 2 or 3, which is the true sineiris is Lam. which is always reported as syn. of sulcata and so forth. The work gives a great deal more trouble than I expected when I undertook it; but that would be nothing as I take the more interest in it, the more I advance — but I regret to be obliged to trouble others so much with it. —

Dr Mead writes me that he has some parcelage in your hands I believe, and desires me to have it sent with things for me. A friend of mine will be in New York in February or beginning of March, and take every thing destined for me at Poppe's —

I have heard nothing from Lindheimer, but as he was going to the coast in the beginning of December to take dry plants for me and live ones for you himself there and ship them, I am in daily expectation of them and shall send you your part directly if the rivers remain open, as they now are.

Excuse my bad writing and still more the trouble I give you with my letters. —

Very truly yours

George Engelmann

I have a large box full of plants here for you from Mead. shall send it in Spring.

To Prof Gray, Texas seeds
Octr. 1847

41 Dilea luxiflora
42 Eupatorium ⅌
43 Rhynchospora No 356 herb.
44 Eryngium Leavenworthii
45 Gaillardia pinta
46 Cynanchum Tuwakonia
47 Specularia sp.
48 Helianthus lenticularis
49 Pluchea foetida
50 Sida
51 Jatropha stimulosa
52 Convolvulus canolinus
53 Elymus
54 Solanum ?
55 Opuntia "minor"
56 Monarda
57 M. aristata var
58 Mikania scandens
59 Pavonia ? ⅌
60 Dolichos ?
61 Vitis incisa ?
62 Amorpha
63 Petalostemon multiflorum
65 Gutierrezia texana
66 Bryonia Boykinii
67 Cuscuta gamostyla !!
68 212 herb.
69 Lepachys columnaris
70 Malvaviscus Drummondi
71 Clematis Drummondi
72 Eupatorium 305 herb = 42 ?
73 Sida

74 Euphorbia bicolor ?
75 Gymnopsis uniserialis
76 Diospyros melanocarpa
77 Gonolobus ?
78 Astragalus carpocarpus
79 Sida = 73 ?
80 Lagenaria
81 Cassia Desperitilis
82 Cardospermum
83 Astragalus carpocarpus ?
84 Rudbeckia alismaefolia
85 Smilax ovata ?
87 Bolivania erecta n sp
88 Grindelia
89 Pyenanthia Drummondi
90 432 of herb.
91. Mulochia ?
92 Acacia ?
93 Clavigera Riddelli
94 Hedeoma Drummondi
95 Abronius texensis
96 Echinocactus hamatus
97 Oenothera semulata
99 Berlandiera texana
100 Hendecandra texana
101 Menzelia oligosperma
102 = 169 herb. Mimosa
103 Solanum texense
104 Abutilon texense
105 Echinocactus Lindheimeri
106 Desmanthus brachylobus
107 Physalis
108 Indigofera
109 Arenaria Herb 347

Grp. 2.

110 Sida
111 Rivina
112 Chrysopis sericea
113 Bryonia scabellanoides
115 ~~Lantana~~
116 Androsera lobata
117 Oenothera missouriensis
118 Centaurea americana
119 Echinacea angustifolia
120 Gilia coronopifolia
121 Ungnadia
122 Alfarobia glandulosa
123 Herb 212
124 Herb 213
125 Sophora affinis
126 S. semipervirens " sp
127 Cucumis perennis
128 C. perennis ?
129 Cucurbita pyriformis
130 Yucca "maxima"
131 Y. "major filamentosa"
132 "filamentosa"
133 "rupestris"
134 Xanthium strumarium var.
135 X. echinatum } Stones.
136 Spigelia texana ?
137 Euphorbia graminifolia
138 Euphorb herb 223
139 Ambrosia apiera
140 Hallstrolemia herb 250
141 Tragia "rupestris" herb 298
142 Opuntia, large
143 Musket tree
144 do do } from Meta Morras
145 Lantana ?
146 Asclepiadea

Grp. 2.

110 Sida
111 Rivina
112 Chrysopis sericea
113 Bryonia scabellanoides
115 ~~Lantana~~
116 Androsera lobata
117 Oenothera missouriensis
118 Centaurea americana
119 Echinacea angustifolia
120 Gilia coronopifolia
121 Ungnadia
122 Alfarobia glandulosa
123 Herb 212
124 Herb 213
125 Sophora affinis
126 S. semipervirens " sp
127 Cucumis perennis
128 C. perennis ?
129 Cucurbita pyriformis
130 Yucca "maxima"
131 Y. "major filamentosa"
132 "filamentosa"
133 "rupestris"
134 Xanthium strumarium var.
135 X. echinatum } Stones.
136 Spigelia texana ?
137 Euphorbia graminifolia
138 Euphorb herb 223
139 Ambrosia apiera
140 Hallstrolemia herb 250
141 Tragia "rupestris" herb 298
142 Opuntia, large
143 Musket tree
144 do do } from Meta Morras
145 Lantana ?
146 Asclepiadea

[illegible]

Dec. [illegible]

[illegible]

[illegible]

[illegible] I think [illegible] mexican persimmon [illegible] tells me that Adams & Co. [illegible] Woodward [illegible] here to Baltimore, from where it goes [illegible] I believe. He tells me a package of 20 or [illegible] dollars. I shall send by [illegible] as [illegible] really.

[illegible] all received, [illegible] on the 31st

I was continued very indisposed at Cassitas till 3 weeks ago, when the business pressed on me and I have not taken it up since. Received some new ones from Grisebach — not yet the anxiously looked for package from Vienna & Munich. In my last letter I told you that I have found types for 5 or 6 subgenera or genera but I believe we must let the old genus Cassiope stand as it was established by Linnaeus! —

I am glad to see that you have begun to work at the flora in real earnest. I hope the (unopened) packages of Lindheimer will furnish new additions.

If I can assist you in your Manual, as you say, I shall do it with pleasure only tell me how. But I do not see that I could do much.

How often have I thought as you if I could only multiply myself to do all I have before me — how often cursed those numberless fellows who do not know how to kill their time which would be so eminently valuable to others!

If Vahl's C. monogyna is „ex Oriente" it must be the french turkish persian etc — and the german and altaic must retain the name of C. Pyracantha formis Poirk.

[illegible]

I have not willed.

[illegible] complete edit of Linnaeus — [illegible] Kunth — Decandolle

[illegible] Pudlicher

[illegible] of [illegible] on [illegible] of Dr Wilcyanus, shade boxes have not arrived and who has not written since September. —

I shall try to get you a specimen of Pentstemon [illegible] flowering.

If Lowell has any Cereus — Graham, Hort. wonder he had them [illegible] to me?

I know nothing of the Mountains on the Guadaloupe, [illegible] whether they are [illegible], with horizontal strata as the rocks near New Braunfels and on the Bordenales, or granitic. —

Lindheimer writes that he will send you this winter two boxes of live plants, which you will probably get — sooner and better — the last. — But even if dead, the last box, which has been a year on the way, must have contained some things valuable for the botanical description, for example that strange spinous leaved plant — perhaps near Bromelia? — etc. — but certainly not worth 8 dollars.

Pilanopappus roseus Torr — but always white in Texas.

Plantago heterophylla is interesting. I had overlooked it, — have now again examined our P. virgata, and one received from Nicollet (Jeyers coll 1839) which is much larger has 4 times as large fruit etc — perhaps also a distinct species? — flowers also different. —

Thanks, for your kind offer to assist me, and your encouragement to ask questions!

Don't know Tecoma stans — I have not seen it. That Th[illegible]

I have received Silliman Journal 4 extra copies for you — that I got no more, I believe I asked Silliman for a number of extra copies — Bad error in the figure; half size instead of: double the natural size — shape of M. [illegible] should be longer, that it; fruit more connected with stipe: not ⚲ but ⚲. Those errors should be corrected in next number, and perhaps you note, declaring M. macropoda a new species, appended. —

I was much pleased with your paper on new Compositae. But you must excuse me, when I have to correct a few grammatical errors, which it would be better to erase before it goes before the [illegible] public, if possible.

pg 47. Lindheimeria line 5 & 6 [illegible] sterilia in place of [illegible] sterilis

line 11 [illegible] the word athenia [illegible] ought to be repeated here, to [illegible] next line it must be: abortiva [illegible]

pag 48. Tetragonotheca line 2d crassa not crasso

Zanatti line 7 perennis not perenni

line 16 diversum not diversa

pag 49. line 4 5 — dentata not dentatae

5. filiformem not [illegible]

nymphae fuid not erat

pg 46 — last line but 2 — aristas — acquantes for aristis — acquantibus

---

Febr. 17th

[illegible] since I signed this letter, opened and changed [illegible] plants — they are in very good condition — but not many new ones — a good many complete sets of species, of which we sent a few only last year. — Will you not be pleased with many of them — some no doubt new — though I have not [illegible] time to examine any of them — There is a fine large new Aster very near trifida — but entirely distinct — a new? but a pretty variety? of Ambrosia coronopifolia — The beautiful new Cassia gamostyla etc etc — I shall send the — probably in a week. — I am more than usually busy in the practice of my profession, so that [illegible] more limited, the [illegible] in this season — but I have put every thing aside now, even Cassiae, to finish Lindheimer's plants — then I shall resume Cassiae with all possible diligence — You will do me a great favor, by noticing for me every thing new published about Cassiae and telling me how to obtain the information. — I should not be able to examine Lindheimer's plants, and must leave it all for you, but shall have to make some remarks about the region where they have been collected etc. —

I am writing to Agassiz by this mail.

Please pay to Mr Silliman 5 dollars subscript for 1847 and charge me with it.

Very truly yours

Asa Gray

Linh. has also sent pieces of wood of many trees or shrubs; I have a mind to divide them into a dozen specimens and offer the separate for sale what say? — many Malvaceae — 2 Bothriocaulon etc among the plants

Mr. Gray
Cambridge
Illinois

Have paid
bill. $2 —
Credit &
make no
account.

St Louis March 9th 1847

My dear Doctor,

I have just packed the box for you and shall give it to morrow morning to Mr Woodward, agent for Greene & Co's Express. — It contains 1 a complete set of Lindheimers plants received last month; a few numbers are wanting, only such however as were mere duplicates of species sent last summer, as Ludwigia natans, Vernonia Lindheimeri and others. One specimen please to return: a female plant of a Baccharis? the only specimen in the collection. 2 A number of specimens collected by me here last fall, one Compositae, my two new? Cyperi and others which I thought might be of interest to you.

3. Texan seeds with the Catalogue for you
4. Do Do Do for Hooker, which you please to forward soon.
5. 15 pieces of dispersed woods, numbers corresponding with Lindheimers Catalogue — You will find some very interesting — the beautiful wood of Algarobia, Berberis, Sophora? the very pretty euphorbiaceous shrub etc. — also a piece of the stem of the palmaceous? plant (212) — and a piece of the stem of Ambrosia aptera DC which is not 4 angled.
6. A paper full of labels. In hurrying through the collection to select your specimens I have only put a small paper to each plant with the number only; for part of them I have since had time to substitute the full labels, which are in this paper. The others I shall send in my next letter.

My plan is the following now. I am now arranging the collections of 1845 & 1846; put all the specimens which belong together in the

same paper, and in systematic order, count them and prepare them for distribution, number them, beginning with 319 Clematis Drummondi and so forth. I shall then send you this list; but before I have labels printed and the specimens distributed into sets, I must have from you a correction of the list, where in case I should have made mistakes in classification e.g. if the evergreen shrub, which I take to be santalaceous or something near it should prove very different, another place must be assigned to it, and my numbers must be altered, for I want to have every thing correct. —

I shall then write out corrections for our first Lindh. collections, which you may increase with your notes.

Then I must write a botanico-geographical introduction, from Lindheimers letters & notes — as to the region explored by him in 1845 & 1846, — which must head our paper.

Finally in distributing the plant, when all the specimens pass through my hands, I shall have occasion to make some further observations and notes, which I shall write down for your use. —

The Cucurbitae & Cacti I will work out, also to some extent the Euphorbiaceae. —

We should, i.e. you should describe all new things even if not in sufficient number for distribution, to head any Bonn-people etc. which might be disposed to rob Lindheimer and us of the priority; but to speak seriously, this priority I think very little, but I consider it important that all the new plants of this country ought to be described here, so as to prevent such blunders as are made in the Pinus of Max Wied's travels &c

in confusion

I believe I have now said everything as regards Lindheimers coll. Included I send a head of a new plant, probably a new genus of Melanthaceae, which is very pretty, and might perhaps be called from the hand-shape of the palea Chiropaleon (if palea is a greek word, which I don't know).

I am in correspondence with Prince Salm-Dyk the great Cactus-maker, he is sending me all new important works on Cacteae, so that we in future will be enabled to keep up with the progress of botany in this branch also.

Klotzsch sends me notes on northamerican ferns from one to two sheets, which he desires me to translate & publish. What do you say, shall I do it? will it further science? — description of a few new species; better distinction of known ones, new localities (especially from Ruegel's coll.). It seems to me a useful undertaking.

Braun sends me descriptions of Marsilea polycarpa, which proves to be M. macropoda a very distinct species, then is only an australian somewhat like it. — Braun has sent good specimens and plant of all European Spargania & Sagitt, and thinks them different from ours! I want you to get me complete specimens of the eastern ones.

Braun has studied again the Algae, to which he refers Characeae and says he has found new and most interesting relations etc. and will publish soon a preliminary essay on them.

B thinks, that Cucurbitaceae form a family as well as Dolichocaceae, Cyphineae, Cassytaceae & Monotropeae, but that all of them are properly speaking no true families, but parasitic subfamilies of Convolv. (Gesneriaceae?) Laurineae, Asarineae, Cytinaceae &

Salem-Dyck asks me, what are Nuttall's Opuntia mesacantha; O. caespitosa & O. humifusa, all from Kentucky. — I dont know anything of them. Are you acquainted with them or at least the names, or the works where published? —

Fendler must be in a bad situation and I fear that the whole undertaking may prove a failure. It will be hardly possible for a single man to explore secluded spots, far from State etc without danger of life. However I shall wait for letters from him. His last was dated in November.

Prof. Asa Gray
Cambridge
Mass.

Will Mr. Lowell do something for Lindheimer after the receipt of these seeds, which I suppose you will divide with him?
I hope to hear soon from you, and from the arrival of the box. But our mails are now in a miserable state

very truly yours
G. Engelmann

Sidney March 23 1847

My Dear Doctor

Your last letter dated Jan. 16th was answered by me on Febr. 17 and on the 9th of March I wrote you, that a box with plants, seeds & woods would be sent next day. I hope that it will be in your hands safely before this reaches you, and that the seeds for Kosher will go with the steamer of the 1st Apr. I have written to him also, but I wish you would also put in a good word to excuse or explain my delay in examining the Cecropiae. A letter received a few days ago informs me, that the Cecropiae from Munich & Berlin were still in Germany in Febr.! So they are at least safe. I was afraid they were lost.

In this letter you find included 1, labels for all those specimens, not yet fully labeled in the box.

2, that part of the Catalogue, which has not yet been sent in my last letter. In regard to this I have to say, that many mistakes may occur in it, in the classification, and others in the numbers of Lindheimer thrown together. — So for example it 538 Condalia and belongs after 365; other mistakes may occur, e.g. in the place I have given to 417 etc.

I may also have made mistakes in putting together e.g. under 383 No 408. 14. 17th and 315, some smooth, others very hairy etc. If so, you must inform me of it — sorry I. You will find further that I have put in different numbers e.g. Tragia 523 & 524, Artemisia 439 & 440, also 441 & 442, Ambrosia 428 and 429 — but I had large numbers of specimens, and I thought the subscribers would not be sorry to get varieties of the same plants especially as most of them are rare. — A few common plants occur amongst them, but I think the mass of rare & new ones and the fine state of the specimens, ought to excuse that. — For the same reason I think subscribers should pay for their part of the freight, it will be very little to them but a great deal to Lindheimer who lives in a very expensive country, as he pays for flour, a barrel 20 to 25 Dll, coffee 25 1 50 a pound etc. — I have sent him a years supply of provisions from New Orleans, which have reached him and will make him easier. —

My business now will be to write out a geographical introduction for the Plantae Lindh. 1845 & 1846. — Then I shall wait for your answer in definitely arranging the numbers for them: you must tell me e.g. No 538 must be 366, and all the numbers from 366 to 537 must advance one and so on. I shall then print the labels and distribute the specimens into sets. While I do this, every specimen will pass through my hands and I shall have occasion to make many observations, which I shall write down for your use. In the mean time you will have prepared an account of the whole, description of the new species, remarks etc to the old ones and a notice of every one with locality and month when collected, so that it may be copied on the label. —

Give my respects to Agassiz and tell him that I shall soon begin to collect our fishes for him; so far our fish market was miserably poor, as we are still in winter here; but Spring will come now I hope.

Truly

Yours

J. Engelmann

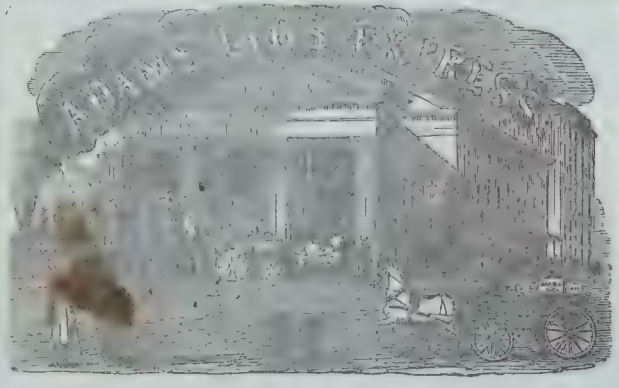
A letter from Dr Gregg says he has sent over 100 spec of plants from Monterey & Santa Fe for me, and the same to Dr Short. — No news from Dr Wislizenus since he left Chihuahua in September; nothing of his collections has arrived.

Prof. Asa Gray
Cambridge
Mass

BOSTON MAR 24 1847

The last letters from Fendler are dated on New Years day — You know, that the Governor of N. Mexico and 20 Americans have been massacred — Taos in January — no news yet from Santa Fe so late but it is probable that the insurrection has extended through the whole of N. Mexico — What in that case will become of Fendler? — He writes, that he has a barrel full of Cactus, many species of pines, and perhaps 100 species of other plants. He asks for more money, and more drying papers. Shall I send him 100 dll more for Mr Oakes or somebody else? — At all events I shall wait for the next news from him. — The money could be sent easily by order on the Volunteers there.

JE



ADAMS & CO'S.

Boston, New York, Phila., Baltimore, Washington and Wheeling

PACKAGE EXPRESS.

OFFICES, 9 Court st. Boston, 16 Wall st. New York, 80 Chesnut st. Philadelphia, 7 Light st. Baltimore, Penn. Avenue, Washington, — Water st. Wheeling.

Packages will be received and forwarded to Norwich, Worcester, Lowell, Salem, Portland, and all the principal Eastern cities and towns.

Custom House Business attended to with great promptness in Boston, New York, Philadelphia and Baltimore.

New York, March [illegible] 184[illegible]

Mr. W. Gray

To ADAMS & CO. Dr.

For Freight,

Charge [illegible]

Received Payment for

Adams & Co. [illegible]

Boston, N. York & Philadelphia Package Express,

VIA. NORWICH,

OFFICES, 9 Court St., Boston. 16 Wall St., New York. 80 Chestnut St., Philadelphia. 7 Light St., Baltimore. 85 Fourth Street, Pittsburg.

Packages will be received at Office in Boston, and forwarded to New York, Philadelphia, Baltimore, Washington, Richmond, Charleston, Pittsburg, Wheeling, Cincinnati, Louisville, St. Louis, New Orleans, Norwich, New Haven and Hartford Conn.

Boston, March 20th 1847

[illegible] Cambridge

To ADAMS & CO. Dr.

For Freight 1 Box

From [illegible] to Boston, [illegible]

Rec'd Pay't for Adams & Co.

[illegible]

St Louis April 3d 1847

My dear Doctor

Your last letter is of Jan 16th. I have written to you Febr. 17th, March 9th and March 23d. Lindheimers plants & seed were sent March 10th and aught to have reached you about the last of that month (what are the Expenses of such a box?) So that I may expect your answer about the middle of this month. Still I will write now; as in two weeks, I will have again a good deal to communicate. — I have examined Lindheimers Euphorbiaceae & Asclepiadeae. —

I had not sent you Asclepias paniculata coll. 1846, but last year I sent you the same plant coll 1842 near Houston — so that there can be no doubt about the Identity. It is a plant collected by me also in Southern Missouri and in Arkansas. I have already written to you, that in Lindh. Coll there is another similar, but distinct species, and have sent you specimen coll 1845 without number — a poor specimen if I recollect right — and one in fruit without. I find now a third one № 346. 1846. of which I had neglected to send you, as I considered it identical with the last — But I now find that they are widely different and that 346 belongs rather near A. paniculata, but so far appears distinct. I include in this letter a flower of each. I have no doubt, that the old Mitchell Jones Anantherix must be restituted for these 3 plants together perhaps with A. connivens, which I have not examined.

Asclepias: corolla reflexa, coronae staminae foliolis arrectis concavis s. convolutis (Decaisne says „gynostegio sessili" but our A. longifolia & auriculata has gynosteg. stipitat.)

Anantherix corolla rotata coronae staminae (unicuculata) foliolis curvatis-saccatis integris, longitudinaliter semibilocularibus, foliolis in alto 3 munitis. — Corolla gracilis

1. A. paniculata Mitt foliis obovato-lanceolatis, breviter petiolatis, obtusis s. acutis, caulis, umbellis paucis glabriusculis, alabastris ovato-subglobosis, corona staminea (violacea) corollae lobis dimidio minore, foliolis patentissimis, gynostegium ovale non aequantibus, massis poll. longe rostrato-attenuatis.

2. A. angustior n. sp foliis anguste lanceolatis breviter petiolatis ~~obtusiusculis~~ acutis, umbellis paucis pubescentibus, alabastris ovoideo-conicis; corona staminea (violacea) corollae lobis ter minore, foliolis curvatis arrectis gynostegium ovale subaequantibus; massis pollin. longe-rostrato attenuatis. — № 346. — N. Braunfels, Texas. Aug.
corolla larger, lobes narrower, more acute than in the last species, coron. stam. smaller, and more adpressed.

3. A. lanceifolia n. sp. fol. linearis-lanceolatis versum attenuatis, acutis breviter petiolatis, umbella singula (an semper?) terminali pubescente, alabastris depresso-globosis, corona staminea (flavescente marginata v) corollae lobis paulo brevior; foliolis patulis, gynostegium globoso-depressum superantibus; massis poll. ovatis breviter rostratis. — № N. Braunfels, Texas.

№ 350 is probably a Gonolobus, though I can not discover any membranaceous margins of the anthers, on the contrary, the stigmatic disc appears to be recurved over the anthers. — It must be near G. velutinus (№ 11. Dne. p. 593) and others in that neighborhood.

Gonolobus? planiflorus n. sp. corollae rotatae, glabrae (viridis) reticulatae venosae, lobis ovatis, obtusis; corona staminea in annulum callosum redacta; gynostegio stipitato, anthersum cuspidibus nullis; stigmate nudo orbiculato-subpentagono depresso; mass. poll. oblique ovatis rostrato acuminatis; folio. mem. t

352 I hardly doubt that this is a Roulinia Dne p. 516. the generic characters do not entirely agree, but that is nothing quite unusual with Decaisne's genera of Asclepiadeae! — Why does he say in the generic character "calycis lobis obtusis" that does not belong here — His specific description of the Corona stamnea does not agree with that of some of the species. R. Jacquinii comes near our plant in the flower, the lobes of the corona are also 3 lobed, but in ours the middle lobe is larger and short, not ligulate, nor as long as the corolla. scandens, laevis, fl. corollae sotutae laevis margine incrassatis; coronae stam. carnosae 3 lobis, lobo medio majore, 2 cusp. auctae, rotundatis; massis pollin. perfunde. fertilibus; folliculis inpra supraque obtusis; folliculis laevibus. —

I have observed, that I have seen in no asclepiadeous plant before besides, that in this species the 2 of the lobes of the corona differ from the 3 others; two have a sulcate prominent nerve in the middle, which connects the lobe with the gynostegium, the 3 others are without it, and even in the middle! —

149. I think a Metastelma RBr. distinguished from all described by Dne by the linear revolute lobes of the corolla and at the same time the long subulate lobes of the corona. — Lobis corollae campanulatae erecto-patulis, apice reflexis, intus retrorsum papillosis, villosis; corona stamina 5 loba foliolis subulatis — acutatis, erectis gynostegium superantibus, massis pollinis oblique ovatis (minutissimis) folliculis linear-lanceolatis laevibus. — Might be called M. texana

162 This is evidently Chthamalia biflora and might be considered distinct from Gonolobus but our Gonolobus cynanchoides forms a connecting link — in the shape of the corona certainly a Gonolobus, but in the habit hardly to distinguish from Chthamalia biflora! so that Lindheimer collected only a few specimens, thinking them the same! — The shape of the corona in both has however also a certain resemblance. The short excavated process in Gon. cyn. is here elongated in a long cusp, which is curved over the gynostegium.

How can Decaisne say that Podostigma viride Nutt. = Asclepias connivens and Asclepias viridis Walt. = Asclepias paniculata, when Nuttall himself says that he knows his plant only through Walter, so that both are necessarily the same?

243 Asclepias viridiflora is the same as the St Louis plant, only the flowers and all parts of them are narrower & slenderer. Many specimens have broad oblong or obovate leaves, others have lanceolate & acute ones.

7 Asclepias auriculata n. sp. radice tuberosa caule erecto, glabro, foliis sparsis linear-filiformibus, umbellis plurimis subsessilibus; pedunculis pedicellisque pilosis subaequantibus; calyce extus villoso, corolla glabra reflexa; foliolis coronae staminum gynostegio brevioribus apice truncatis, breviter 3 dentato, margine involutis, basi latissime biauriculatis, auriculis dimidium foliolum aequantibus; gynostegio breviter stipitato, globoso; massis pollin. incurvis aequilateris (non attenuatis); folliculis lanceolatis longe rostratis, laevibus.

Rocky prairies N. Braunfels, scarce. fl. Sept. — It might also be called A. filifolia. Stem about 3 feet high somewhat glaucous leaves slightly scabrous on the margin which is not revolute, 4—6 inches long, 1/3 to 1/2 line wide; umbells slightly hairy, — Corolla green with brownish tips. — Horny margin of anthers rounded, not angular as in most Asclepiadeae. Pollen masses also of an unusual shape; curved and nearly equally wide at each end. — Remarkable from the large triangular wings at each side of the leaflets of the corona. — The same plant was collected by Col. Fremont, on the upper Arkansas (1845 No 235)

Somewhat resembling Acerates angustifolia Dne, which has been collected by Geyer on the Desmoine river in Iowa (formerly described by me as A. Geyeri); but easily distinguished by the perfectly glabrous (not pubescent) stem, the leaves being neither revolute nor venose — but especially by the flower, which is larger, and the remarkable structure of the corona and the shape of the pollen masses, which in A. angustifolia are short, broadly cultrate, nearly triangular.

248 Asclepias linifolia Kunth? near A. verticillata; but stem branching from the base leaves always opposite, linear-lanceolate, umbells smaller, fewer flowered, gynostegium in both long stipitate, coronal leaflets in our plant only half as long as in A. vert. two thirds the length of the gynostegium; in our plant with blunt indistinct — A. vert. with strongly marked lobes; horns in ours hardly reaching as high as the top of the gynostegium in A. vert much longer and arched over it. Follicles in A. v. much longer attenuate, than in ours. Pollen masses equal in both.

Euphorbiaceae

165 Euphorbia oblongifolia n. sp. annua, caules ramosa, suberecta, caule linea pilosa notato, foliis oblique ovatis, obtusis, apice et margine inferiore, serratis, supra glabris, subtus parce pilosis; stipulis connatis, s. bifidis, fissis; involucri glandulis sex petaloideo — marginatis, angulis capsulae acutis, pilosis; seminibus, acute 4-angulatis, transversim rugosis, ex nubello cinereis. depressed

In saxosis, N. Braunfels, Lonic. 1846. — A more pubescent variety was collected near Industry 1844 — depressed. The same from Red river Dr Hale. I have described it in my manuscript of Plant Lindh. with E. Geyeri — two years ago under the same name.

108 E. hermianoides seeds more roundish oval than Plant. Lindh 300. and a little shorter, angles more rounded.

292. E. hermianoides whole plant, and also seed smaller than Pl. L. 300, but else much resembling it; — seeds rather sharper angled.

290 E. rupifraga n. sp. perennis? glaberrima, glaucescens, caulibus pluribus e radice lignosa suberectis; foliis oppositis oblique triangularibus, inferioribus cordatis, integris, obtusis, petiolatis, stipulis subulatis distinctis s. connatis; involucris in dichotomia ramulorum pedunculatis, saepius in ram. brevibus glomeratis; pedunculis petiolos aequantibus; glandulis involucri transverse ovatis (albis), capsula ~~globosa~~ obtusangula, seminibus cinereis obovatis obtusangulis, irregularibus leviterque foveolatis.

In crevices of calcareous rocks, N. Braunfels June & July. Plant about 4 inches high — leaves fleshy or coriaceous. — Near E. deltoidea (Engl. MSS) from the upper Platte, but seeds thicker, more ovate with obtuse angles and more indistinct irregular pits; the seeds of the other are deeply negose foveolate, leaves also more cordate, obtuse, on longer petioles. Both are probably perennial!

293. 294. E. longipila n. sp. annua, undique plus minus pilosa, a basi ramosa erecto-patula; foliis oppositis, breviter petiolatis, oblique triangularibus, basi subcordatis, obtusis leviter dentatis s. integris, stipulis lanceolato-subulatis, involucris longius pedunculatis, pilosis; glandulis (albis, rubris) obovatis petaloideis; capsula glabra, acute angulata

seminibus cinereis, ovatis, acute angulatis, levissime transversim rugulosis, foveolatis

Dry rocky Cedarwoods, N Braunfels; fl. Aug & Sept. Also in open dry woods on the Riverbank. — We have received from Mr Lindheimer a more hairy form with nearly entire leaves (most of the specimens distributed in the sets) and a less hairy one with more denticulate leaves. — Plant 5–10 inches high, somewhat glaucous, often turning reddish or lower surface of leaves red.

9 Eumbratilis (N. a good latin word means tender, grown up in the shade, disliking sunshine or hardship) annua, erecta, a basi patulo-ramosa, glaberrima, flavo-virens; foliis caulinis obovatis, in petiolum attenuatis apice obtuso emarginatis; foliis floralibus superioribus transverse ovatis, connatis; umbellis trifidis, bis terve bifidis; involucrorum subsessilium glandulis lunatis; capsulae coccis obtusis, seminibus cinereis undique foveolis numerosissimis sub-confluentibus impresso-punctatis

Light fertile soil in shady woods especially cedar woods near N. Braunfels exclusively covering large patches. fl. April. — A most delicate species of a pleasant yellowish green colour 10–12 inches high. The punctures of the seeds are some larger some smaller, partly somewhat confluent and ~~[illegible]~~ give the seed a somewhat reticulate appearance; forming also grooves near the inner angle of the seed. It belongs to the division Peplides with lunate glands and dotted seeds to which also the following species belongs.

10. 313. Euphorbia Lindheimeri n. sp. annua erecta stricta simplex s. a basi parce ramosa, glaberrima, flavo-virens; foliis caulinis cuneatis obtusis s. emarginatis, foliis floralibus superioribus transversim triangulari-ovatis non connatis; umbellis 3–5 fidis, bifidis; involucrorum subsessilium glandulis lunatis; capsulae coccis obtusis; seminibus cinereis, undique foveolis numerosissimis distinctis impresso-punctatis.

On stony sterile prairies near New Braunfels in patches fl. March & April. — Strictly erect only 4 to 8 or 9 inches high, rarely branching from the base, but often producing a few flowering branches below the umbell, this is in poor specimens 3 parted, in larger ones oft- 4 or 5 parted; umbellets 2-parted, simple or again parted; sometimes one sided; producing one proliferous branch (No 313). Seeds same size as the last, or seven tenths of a line long; but more deeply pitted; the little holes are never confluent nor forming grooves on the inner surface. — Habit very similar to my E. cuneifolia, but seeds ~~much larger of~~ this are much smaller and have only 4 dots on the inner surface. —

Croton ellipticum majus fl. m. cal. 3–4 partito petal 3 (raro 4) stam 5–6 disco sensata imposita; fl. f. cal 5-part subaequali, ovario 2 loc 2 ovul. alterno abortivo; caps 1 loc. 1 sperm. 4 valv. styl 2 profunde 2 fid.

302. Cr. ellipt. minus fl. m. cal. cal 5-partito petal 3; stam 6–7 — fl. f. cal. 4 s. plerumque 5 partito, segmentis minoribus 1–2 subinde interjectis — ovario ut supra.

If this plant is retained as a genus, it must have a new name — for example Monospermum (with one seed) or but it is in every other respect so much a Croton, except the number of ovarium etc it looks in external appearance so much like the next, that the separation is not entirely natural, it would seem. —

304 Croton reflexum n sp fl. m. cal regulariter 5-part lobis ovatis, petalis 5 alternis, lineari-oblongis, basi laxatis; disco 5 dentato; stamin. sub 11 fl fem. cal 5 part. aequal. (longius pedicellatis); ovar disco 5 dentato imposit. 3 loc 1 ovul 3, profunde 2 fidis; caps (reflexa) 3 cocca 3 sperm. sem. oblongis, ~~[illegible]~~

Returns to Dr. E. —

that be may put in order this ~~summer~~ summer — Acts of Handel, Lind, Greff, &c —

ating distributed numbers. —

1847.

291. c. Croton pulicaresseum n. sp. ♂ mas. cal. 5 lobo valvato, petalis 5 ~~bus~~ oblongis imbricatis, oblongo obovatis, stam. 16 disco 5-lobo imposita; ♀ fem. cal. 5 lobo ~~disco 5 glandulosa~~, glandulis disci 5 ~~opposita~~ minutis et 5 ~~majoribus subulatis alternis~~ (~~his majoribus petalis?~~) disci glandulis 5 elongatis subulatis, alternis (or are these rudiments of petals, and is the plant a Gyssolaria?) Ovario 3 loculi. 3 ovul. styl 3 profunde 2 fidis, capsulis tomento brevi stellato tectis, seminibus ovatis supra acutis.

177 is the same, but divisions of fem cal. more spathulate, and angles of disc not elongated. — Always also 16 stamens.

297. a. = 297. b. only larger in all parts, seeds also larger. stam. also 16.

176 looks different; more green. in three specimens I found only one female flower, in which the subulate petals (?) are very conspicuous. Stamens 14 – 20 —

All these are probably the same species; stamens 14-20 but mostly 16; lobes of fem. calyx small, linear lanceolate or larger, and spathulate; disc of fem. flower with 5 more or less prominent lobes alternating with the segments of the calyx, which appear to represent petals; capsule globose etc.

223. I think is new genus near Stillingia Lob. Dioica: fl. m. glomerati, sepala 3 (rarissime 4) ~~intus~~ valvata, petala nulla; stam 12-20 receptaculo pilosa imposita; filum, aestivat erecta antherae didyma. — fl. fem. terminales singuli, sessilis stipati, sepala subs. imbricata; petala 0; discus irregulariter lobatus; ovarium 3 loc. l. loc. 1 ovul. ov. pendul. Styl. 0 stigmata 3 bipartita, multifide cristata. Capsula trivora 3 sperma semina supra medio affixa; embryo in albumine carnoso oblique obliquus

In the larger specimens I find 18 to 21 ~~stamens~~ stamens — in the small ones 13 – 15 only, but that is the most important difference I can find. Lindheimer says that they are the same plant only from different localities open stony places and shady woods. — Seed subglobose truncate at base, carinate at top & back; Embryo oblique in the upper half of the albumen.

I wish you would put the following in a note to these Euphorbias: We are acquainted with 6 or 7 northamerican peploid Euphorbias, of which we give the following brief synopsis.

Euphorbiae exstipulatae, umbellatae, glandulis involucri lunatis capsulis laevibus, seminibus (cinereis) exsculptis.

§. Sem. facie interiore foveolato – 4 – punctatis, exteriore laevibus.

1. E. cuneifolia n. sp: annua, fol cuneatis, retusis s. emarginatis. Georgia, Texas

§§ Sem. facie interiore 2 – sulcatis, exteriore foveolato – punctatis

2. E. Peplus Lin: annua, fol. obovatis, petiolatis; capsulae angulis 2 – carinatis. Eastern States, introduced.

3. E. umbratilis n. sp: annua, fol obovatis petiolatis; capsulae angulis obtusis seminibus punctato subreticulatis. Texas.

§§§ Sem. undique aequaliter foveolato-punctatis.

+ foliis inferioribus petiolatis

4. E. commutata n.sp. biennis (s. perennis?) multicaulis, foliis spathulatis, superioribus sessilibus. Missouri, Kentucky. E. Peplus auct. am.

β? controversa: annua, caule basi simplici. Ohio, Virginia

++ foliis cuneatis.

5. E. Lindheimeri n.sp. annua. Texas

++ foliis basi latis sessilibus

6. E. Mereschii n.sp.: perennis, multicaulis, glauca, foliis ovatis, basi obtusata s. subcordata sessilibus, acutis. Upper Platte River

---

The last was discovered & brought to me by Dr Mersch, who have it in company with Geyer 1843. Perhaps it may be also in Geyer's collection, — it is a most distinguished species. —

E. commutata grows in our hilly region, and in similar places in Kentucky (Short) leaves in winter & spring red (as in the German E. amygdaloides) persistent on young shoots. — The variety? is evidently annual, I have it from Lapham & Buckley. —

E. cuneifolia was collected 1839 by Lindheimer on the Brazos and I have seen it (without seed) in Hb. Short as "Euph. Peplis" Georgia Boykin

---

From the brevity of Nuttall's Polygotus angustifolius, on Red River I have become doubtful, whether my Plant from Geyer is the same, and whether Lindheimer's plant, my Acerates auriculata is not = Nuttall's? — Dne's description is not satisfactory but I think he ~~[illegible]~~ (or rather Nuttall) could not have overlooked the large auriculae, and then he says: corollis gynostegio subbrevioribus, spice tridentatis, which agrees with Geyer's but not with Lindheimer's plant. Has any body else found Nuttall's plant farther north than Red river? — I have copied a drawing of Geyer's plant, which however I believe I have sent you long ago. —

Note In introducing a new alismaceous plant from St Louis, ~~I take the liberty~~ I think it not amiss to review the north american genera of that family. From a careful examination of different species of this family, I have been forced to the conclusion, that we have a natural genus intermediate between Alisma & Sagittaria, and it has become probable to me that all the species of Richard's genus Echinodorus belong to it, besides a number of others, generally comprised under Alisma. It would therefore become necessary to alter the character of Echinodorus so as to ~~comprise~~ include all those species — Our three genera would have to be characterized in the following manner.

~~1. Alisma in flores hermaphroditi, Perigonii exteriores foliola 3 valvatim~~

1. Alisma Linn. flores hermaphroditi. Perigonii interiores folia 3 petaloidea aestivatione involuta. Stamina definita 6 (an semper?). Ovaria plurima verticillata. ~~Styles~~ Carpella lateribus planis, dorso dilatata, 2–3-carinata.

2. Echinodorus Rich. flores hermaphroditi. Perigonii interiores folia 3 petaloidea aestivatione imbricata. Stamina definita — indefinita (9 — 21 in speciebus Americanis septe binalis). Ovaria plurima, capitata. Carpella costata.

3. Sagittaria Linn. flores monoici, rarius dioici. Perigonii interiores folia 3 petaloidea aestivatione imbricata. Stamina indefinita. Ovaria plurima, capitato-congesta. Carpella lateribus convexis, dorso carinato-alata.

The structure of the flower, the ovaria, the fruit and the seed is in all the same and will not be repeated. Authors state that the anthers of Alisma are introrse and of Sagittaria extrorse, but I am compelled to state that I find them in our Alisma (A. parviflorum Pursh?) as well as in all the species of Echinodorus and of Sagittaria, examined by me always extrorse. In our species of Echinodorus the number of stamina varies from 9 to 21, but it is very probable that several European species of Alisma are true Echinodori; and then the lowest number of stamens in this genus could be six. Alisma natans, ranunculoides & parnassifolium appear to me to be true Echinodori. Alisma proper would then be restricted in Europe to A. plantago and in North America to the two or three outspread of this plant and to A. geyeri Torr.

1. Echinodorus parvulus n. sp. annuus, stoloniferous, foliis (submersis linearibus, emersis) lineari-lanceolatis s. ovato-lanceolatis, utrumque acutis, scapis folia aequantibus, umbellis paucifloris simplicibus, subinde foliosis, decumbentibus, radicantibus; pedicellis elongatis, fructiferis recurvis, perigonii foliis interioribus obcordatis; staminibus 9; stylis ovario pluries brevioribus.

Margin of ponds in the hilly country about St Louis; only observed in wet seasons, abundant in Aug. & Sept. 1845 but ~~not~~ 1846 it had disappeared! When overflowed it forms semitransparent linear phyllodia, without any lamina but generally the leaves are 6 to 12 lines long and 1 to 6 lines wide; umbells from 3 to 6 or 8 flowered, pedicells 6 to 20 lines long, flowers about 3 lines in diameter. I have distributed this plant to correspondents under the name of Alisma parvulum, not being then aware that the genus Echinodorus would comprise this species. — Apparently very near Alisma tenellum Mart. fr Brazil.

2. Echinodorus rostratus (Alisma rostratum Nutt in Herb. Torrey) annuus, foliis late ovatis obtusis, basi sinu latissimo cordatis s. truncatis; scapo erecto folia superante, verticillato-paniculato, multiflorum; perigonii foliis interioribus orbicularibus, subacutis; staminibus 12; stylis ovario longioribus, carpellis stylo persistente rostratis.

Margin of ponds and lakes in the rich alluvial soil about St Louis and from Illinois to Arkansas, fl. Aug. & Sept. — Like the former rare in wet and common in dry seasons. 4 inches to 2 feet high; the smallest depauperate specimens with lanceolate leaves, acute at each end; leaves generally 1 to 2½ inches wide and 1½ to 2½ inches long; flowers about 5 lines in diameter; fructiferous pedicells straight, capsules strongly ribbed, rostrate.

3. Echinodorus radicans n. sp. perennis, foliis late ovatis, obtusis, basi sinu latissimo cordatis s. truncatis; scapo elongato, decumbente, radicante, subinde foliifero, ramoso; floribus longe pedicellatis, verticillatis;

staminibus sub-21; stylis ovario multo brevioribus, carpellis numerosissimis breviter rostratis.

In lakes in the bottom lands of the Mississippi, near Stoneis, and from here to Arkansas and Texas. fl. Aug. to Octob. — Petioles often 1 to 1½ foot long, leaves from 3 to 4 inches long and nearly as wide to 8 inches long and 7 inches wide; scape often 2 to 4 feet long prostrate over the surface of the water, branching, radicant, producing a profusion of large and fine white flowers, 10 to 15 lines in diameter, and often branches of leaves and young plants; stamens regularly 21 but often by abortion a few less; carpells much more numerous than in the last, but shorter rostrate. I have seen this plant in Herb. Torrey without name or locality.

I here take the opportunity to inform my botanists of this country that I have undertaken a revision of the much confused genus Sagittaria and that I desire them to furnish me with material from their respective regions. The fruit, which appears generally to have been neglected furnishes some of the best characters, and it would be very desirable to obtain all series and varieties with ripe fruit. As one of the results of my preliminary observations I may announce that our north-American Sagittaria sagittifolia is distinct from the original European plant; but comprises a number of North American species as mere varieties, even the diversos S. obtusa Muhl. I would therefore propose the name of S. variabilis for this species which takes in North America the place of the European S. sagittifolia (No. 182 of Nat. Lindh.) which we wrongly supposed to be S. simplex Pursh is the same as form of Sagitt. falcata Pursh, the smallest form, with rigid linear leaves, grows also near Houston on moist prairies. No 183 S. ibolifera n. sp. may be nothing but one of the forms of the true S. simplex Pursh

Note to Cyperus

In the last years I observed two undescribed species of Cyperus, which I publish here.

1. Cyperus tenuior n. sp. radice annua, culmo acute triangulari laevi; foliis culmo subbrevioribus, planis, margine dorsoque scabris; foliis involucri exterioribus longissimis, interioribus brevioribus; umbella composita, radiis divaricato-ramosis; spiculis spicato-capitatis, foliformibus, subteretibus 7-9 floris; rhachi squamis interioribus linearibus adnatis alata, fragili; squamis exterioribus remotis, adpressis, obtusis, dorso herbaceis 5-nerviis, margine membranaceis decoloribus; staminibus 3; stylo ad medium 2fido; Achenio lineari, longiore, apiculato, basi paulo attenuato breviter stipitato, squamas interiores aequante, exterioribus paulo breviores.

Banks of a muddy creek in N. Mississippi bottoms near Stoneis together with Cyp. Michauxianus & C. erythrorhizos and Jussiaea repens; also taken adrift and floating on the surface, fl. Septemb. — From 1 to 2 feet high, slender at base; leaves in the larger specimens 4 lines wide, [illegible] 3 or 4 lines long; slenderer than in

3/. Species

In other northamerican species, [illegible] that the tip of the scale never reaches to the base of ~~that~~ the next above. Nuts 1/8 [illegible] the annual growth, the fragile rachis, the distinct somewhat articulate inner scales, which [illegible] prove this species to be nearly related to C. Michauxianus, [illegible] however it is easily distinguished by the characters given above. In C. Mich. the spikelets are larger, more dense flowered, with 8 to 20 flowers, [illegible] thicker nuts.

2 Cyperus reclinatus n. sp. rhizomate tuberoso, repente; [illegible] scale [illegible] gulari, laevi; foliis culmum subaequantibus, planis, margine scabris; fol. involucri 4–6 umbellam superantibus, radiis simplicibus elongatis, spiculis laxe spicatis, inferioribus refractis, linearibus, subtetragonis, 5–8-floris; rachi squamis interioribus linearibus adnatis alata; squamis exterioribus adpressis, obtusis, dorso herbaceis (7–9 nervis) margine apice que membranaceis; staminibus 3, stylo ultra medium fido, achenio oblanceolato-lineari, triangulato, apiculato, basi [illegible] nato non stipitato; squamas interiores [illegible], exteriori [illegible] tertia part breviori.

[illegible] banks of the Merrimac river, south of St Louis, together with Vernonia Arkansana; fl. Aug & Sept. 4. Near C. tetragonus [illegible] but easily distinguished by the tuberous rhizoma, larger spikes, more distant flowers, larger nut. With C. tetragonus, C. Baldwinii [illegible] C. [illegible] is of forming a peculiar section, of which C. reclinatus has the most [illegible] and longest spikelets, and C. ovularis the most compact heads with the shortest spikelets. Culm 10 to 20 inches high; leaves 1/2 to 3 lines [illegible] spikelet green & whitish, 6 to 9 lines long; 15 to 30 in a head; flowers distant, so that the tip of one scale hardly reaches to the [illegible] of the next above it. Nuts 1/3 lines long (in C. tetragonus [illegible] 1/[illegible])

Additions

Opuntia fragilis var puberens; floribus ex ramis anni prioris ortis; [illegible] clavato, basi sub 5-gono, sepalis sub 13 stipato, sepalis interioribus ~~[illegible]~~ 8 ex [illegible] sulphureis lanceolatis; corolla rotata; petalis imbricatis obovato-lanceolatis, cuspidatis, sulphureis; staminibus numerosis (40–50) inaequalibus (externis longioribus) stylo supra stamina exserto; stigmate 5-lobo, lobis arrectis albidis.

Flowers closely resembling the other Opuntiae, about 8 lines in diameter; ovary 9 to 12 lines long; petals pale sulphur yellow, with a greenish tinge, abruptly pointed. fl. July & Aug (in St Louis). From the Colorado to the Nueces & Rio Grande near Metamoras. We have seen stems of one inch in diameter.

The seeds of several Opuntiae were sent by Lindheimer, species not ascertained.

Mammillaria similis [illegible] sulco tuberculorum varius prolifero; — — spinis omnibus radiantibus, — — floribus ex axillis tuberculorum hornotinorum ortis, sparsis (non centralibus) ~~[illegible]~~ fascicularis; sepalis petalisque lanceolatis, acuminato-cuspidatis, sepalis brevioribus margine ciliato-fimbriatis (sub-13), petalis longioribus integerrimis (20–25) stylo supra stamina

numerosissima exserto, stigmatibus sub-5 viridibus; baccis [illegible]

From the Bonyos to the Pierdenales and to San Antonio. — Flowers dirty yellow with a reddish tinge along the middle of sepals & petals; 2 inches and more in both diameter when opening more than about one inch wide; sepals ciliate with long villous hairs, but petals entire, glabrous, about 15 lines long and 2 lines wide. Seeds ~~as in berries of the size of a large pea, seeds numerous~~.

Mammillaria robustior n.sp. simplex s. caespitosa, axillis tuberculorum tomentosis; tuberculis ovato-cylindraceis supra sulcatis (sulco in juvenibus tomentoso) apice spiniferis, spinis rectis albidis, subdecem subaequalibus radiantibus, una centrali erecta; floribus ex axillis tuberculorum hornotinorum ortis, sparsis (non centralibus), ex rubello flavirantibus, sepalis petaliisque lineari-lanceolatis, acuminato-aristatis sepalis (sub 15) brevioribus exterioribus ciliato-fimbriatis, interioribus margine laevibus; petalis longioribus, integerrimis (25–30); stylo supra stamina (rubella) tortorta exserto, stigmatibus 7–8 viridulis; baccis subglobosis, rugulosis.

High rocky tablelands between the Guadaloupe and San Antonio. — Flowers not quite as large as in the last, about 1 3/4 inch long; number of sepals & petals ~~larger~~, larger; petal about 12 lines long, 2 lines wide; ovaries larger, obovate or subglobose, 4–5 lines in diameter. Seeds [illegible], to be distinguished from those of M. similis, to which this plant bears a close resemblance; but it is stouter, the tubercles longer with deeper furrow, fewer radiating spines & a stouter central erect spine.

Mammillaria sulcata has reddish brown ovate smooth & shining seeds.

Mammillaria applanata n.sp. simplex, depressa, tuberculis elongato-conicis subquadrangulatibus, apice ex tomento albo demum evanido spiniferis; spinis rectis 17–20 tenuioribus inaequalibus, radiantibus, una centrali robustiori erecta; axillis nudis, floribus ex axillis tuberculorum ~~[illegible]~~ nunc precedentes ortis, minoribus, ex rubello albidis sordidis, ~~[illegible]~~ sepalis 8–12 lanceolatis herbaceo marginatis; petalis sub 10 lanceolatis, cuspide apicem mucronulatum fimbriato-denticulatis; stigmatibus 5 stamina paucra brevia excedentibus, flavis. Baccis elongato-clavatis, scarlatinis, seminibus ovatis scrobiculatis, fuscis, minutis.

Rocky table lands of the Pierdenales. — Simple, never respitose, about 3 inches in diameter, and from 1 to 1 1/2 inch high with a perfectly level surface; lactescent; tubercles angular; central spines erect, inclined towards the centre of the plant, 17 to 20 radiating spines unequal, the upper or inner ones white, thinner, the 3 or 4 outer or lower ones stouter light brown. The innermost tubercles of last year appear to bear the flowers in their axills, so that ~~they form fruit~~ form a circle around the tubercles produced in the same year, and the persistent fruits of last year form an outer circle around the flowers. — Flowers 8–10 lines long of a dirty reddish colour, ~~when~~ when not fully expanded, unicolate. Berry 8 to 15 lines long, clavate, incurved, with numerous small brown scrobiculate or rugulose seeds.

Mammillaria hemisphaerica n.sp. simplex non spinosa, tuberculis elongato conicis, angulatis, apice parce evanidetomentosis barbatis, spiniferis, spinis rectis 9–10 tenuioribus inaequalibus, radiantibus, una centrali robustiori, erecta; axillis nudis; floribus — ; baccis elongato-clavatis, [illegible] tenuissime rugulosis, fusco-flavis, minutissimis.

see 4th Sheet

Near the mouth of the Rio Grande (Missouri Volunteers!). — My specimens 4 1/2 inches in diameter and 2 1/2 inches high, ~~fruit 10 to 16 lines long~~. Very near the last, but distinguished by the ~~number of spines~~ [illegible] hemispherical shape, the smaller number of spines, which are [illegible] smaller, lighter coloured, more ovate and less deeply [illegible] lactescent. — Upper spines weaker and shorter than lower ones, these and the central one with a brown tip. — ‡ see fifth sheet.

Mammillaria intertexta n.sp. subsimplex, ovata s. cylindrica (sulco sublongitudinali) axillis nudis tuberculis teretibus, supra plus minus sulcatis ex apice ex tomento albo spiniferis; spinis rectis numerosis, valde inaequalibus, plurimis (20–30) radiantibus tenuioribus, albidis, sub 3–5 versum directis, validioribus fuscis, centrali unica recta robusta flava, deorsum deflexa; ~~axillis nudis, sudro sublongitudinaro~~ floribus ex axillis tuberculorum hornotinorum ortis, sparsis (non centralibus) (majoribus, ~~viridescentibus~~) sepalis petaliisque lineari-lanceolatis, acuminato-aristatis; sepalis 40–50 arachnoideo fimbriatis, exterioribus brevioribus adpressis, herbaceis, interioribus longioribus, recurvatis, coloratis; petalis 30–40 integerrimis, saturate violaceis, patentibus; staminibus violaceis numerosissimis aequalibus, rectis, stylo exserto, stigmatibus sub-7 violaceis; bacca oblongo-ovata, viridi, floribus rudimentis coronata, seminibus fulvis, ovatis, scrobiculato-punctatis.—

Sterile sandy soil on the Pierdenales. — Younger plants ovate or elongate, older ones cylindrical, simple or branching from the base, but apparently not proliferous; 2 to 6 inches high and 1 1/2 to 2 inches in diameter; the plant has the appearance of being covered with a strong network of mustaches; spines, some weak and bristly, others stronger. Flowers 18 to 21 lines long and as wide, of a splendid purple colour, petals darker at tip, lighter at base; fruit without the ~~[illegible]~~ persistent rudiment of the flower 8 or 9 lines long and 4 or 5 in diameter.

I. Corolla deciduous, berry red
a. flowers from the axills of the tubercles of the previous year.

1. M. applanata
2. M. hemisphaerica

b. Flowers sparse from the axills of the tubercles of the same year, berry globose
~~a. fruit [illegible] flowers sparse~~ ~~Berry red, globose~~

3. M. similis
4. M. robustior

II. Corolla persistent, berry green ~~with persistent rudiment of corolla~~
a. flowers sparse from the axills of the tubercles of the same year

5. M. intertexta

b. flowers central ~~berry green with persistent rudiment of corolla~~ from the axill of the tubercles of the same year.

6. M. viviparia
7. ~~M. sulcata~~

Besides these there is Mitchell's M. simplex from the Rocky Mountains; Mr Geyer in the Hooker's London Journal of Botany indicates two others there, and our correspondent from Santa Fe gives us the promise of some ~~other~~ more from New Mexico

Diameter 5 to 7 lines. The description of the flower was drawn up from an incomplete withered flower bud, found on one of the specimens. Since that time my specimens have produced abundant flowers and fruit. It ought to read: floribus in vertice e 6 depressae globosae supra fasciculos spinarum ~~in diversos~~ horizontales extensis tenuissime dissidulo pruinosulis; calyce infundibuliformi; tubo elongato laberinto; sepalis numerosis infimis obiculatis obtusis, superioribus lineatis, cuspidatis, summis elongatis lanceolatis acutis, omnibus margine membranaceis denticulatis ciliatis; petalis pluribus numerosis oblongo lanceolatis acutis integris, basi minutis ~~[illegible]~~ pallide sulphureis; staminibus inclusis, filamentis ex toto tubo ortis accumbentibus, stylo supra stamina longe exserto, stigmatibus 6-8 flavis sub[illegible]ereis, recursis. Bacca globosa scarlatina, squamis deciduis tecta, flore marcido persistente coronata; seminibus nigris ovato-pyriformibus minutissime tuberculosis.

Flowers 20 to 25 lines long of the same diameter when fully expanded. Lower sepals on the ovary and tube short, scaly, about 20 or 30; larger inner sepals about 20; petals 25 to 30, pale sulphur yellow with a very rich scarlet colour at base; flowers open for 2 days in bright sunshine. We observe a short terete obtuse organ, perhaps a bract between the tufts of spines and the flowers, sometimes two of them, persistent after the opening of the flower. Flowering in the summer and fall as it continues to grow and produce new bunches of spines, in that respect very different from Echinocactus Lindheimeri which produces all the spines and flowers of one ~~year~~ season at once in spring. — Fruit about 4 lines in diameter.

Mr Lindheimer has sent an Echinocactus from San Antonio, and I have received the same from the Mouth of the Rio Grande; I have distributed it under the name of E. hamatus, but I am now doubtfull whether it is a peculiar species; it may possibly be the proper specific type and our E. setispinus may be only a depauperate northern form. — Plant 3 to 4 inches in diameter 3 to 6 inches high; 13 ribs straight or twisted, frequently undulate or tuberculate; 10 to 15 ~~radiating~~ spines radiating, upper ~~and lower~~ ones longest, lowermost shortest, both brown, lateral ones white, one central spine strong straight, hooked at the extremity. Manner of growth, flower, fruit the same; the only observable difference is that the petals are rather wider and generally slightly denticulate on the margin. —

Echinocactus Lindheimeri — — bacca globosa, scarlatina, flore villoso persistente coronata; seminibus reniformibus nigris, laevibus lucidis. — Found in muskit flats, in places which are occasionally overflowed; from Colorado to San Antonio and the Rio grande. fl. April. — Berries 8 lines in diameter, scarlet, seeds shining, smooth.‡ — Grown specimens have 21 ribs, one was found with 25; young ones have from 13 to 14 ribs. A specimen before me has a diameter of 7 inches and a hight of only two, with spines only 6 to 10 lines long. Mr L. writes that sometimes specimens occur of a globose shape, but that they are most always depressed.

‡ embryo curved in a semicircle, cotyledons small, sub globose accumbent in relation to the radicle.

4, Cereus caespitosus is synonymous with C. pectinatus fide Hooker. Mr. L. Anthony has sent a great number of beautiful specimens, ~~much larger from N. Gran~~ fels much larger, and with fine and showy flowers; and I can find no specific difference between them and the plant from the Brazos. ♂

Cereus pectinatus major simplex s. caespitosus, ovato-globosus, oblongus s. subcylindraceus, costis 13-18 rectis, spinis albidis (25-30) ex areola lanceolata tomentosa radiantibus, recurvulis, lateralibus longioribus; floribus ex axillis tuberculorum omni parvis lateralibus, ovario globoso tuberculis (sepalis exterioribus rumpentibus) apice cellana villosa spinigeris stipato; tubo corollae campanulato; sepalis plurimis lanceolatis herbaceis apice spinis setiformibus (nigricantibus) villoque coronatis, intimis acuminato-aristatis, medio herbaceis margine petaloideo fimbriatis; petalis plurimis (violaceis), oblanceolatis, s. obovatis abrupte acuminatis s. obtusis, rarius apiculatis ciliato denticulatis; staminibus inclusis plurimis, filamentis virescentibus; stylo exserto stigmate viridi ~~XX~~ infundibuliformi 14-18 partito, bacca viridi elliptica, villosa +

On high rocky table lands between the Guadalupe and San Antonio; fl. April and May. — Generally one or 2 inches in diameter and scarcely higher, but some large (mostly simple) specimens are as much as three inches in diameter and 6 inches high; flowers 3 inches long and as wide when fully expanded; 40 or 45 sepals tipped with 8 or 12 bristles covering the ovary; 45-50 sepals forming the tube of the calyx, similar to the first, and about 25 inner sepals with petaloid margins; 30 to 40 petals, from light rose coloured to dark purple, obovate or oblanceolate, all aristate or all obtuse, rounded or only the outer ones aristate. ~~Fruit~~ ~~The discoverer has sent~~ Fruit about an inch + demum denudata, tuberculata, flore marcido coronata, seminibus numerosissimis, ovatis nigris, tuberculatis.

♂ Some have quite a gray appearance from their long and stout spines others have short and weak spines and look green.

N.B. All this or part of it will come in under nro 401 and the other notes on Cactae may be appended to it in a note.

Among the several species of Cereus and Opuntia, I find a, ~~two of the~~ plants which volunteers from the region between Matamoras and the mouth of the Rio Grande, I venture to characterize only as follows:

Cereus Resacae n.sp. trunco erecto, 3-4 angulato, costis valde compressis acutis; spinis fasciculatis, nigris, valde inaequalibus, tomentosis sub-6 radiatis, validioribus sub 3-5 porrectis, elongatis, medio longioribus reflexa; flore laterali nocturno; fructu oviformi, seminibus ovatis nigris, laevibus, lucidis.

On the battlefield of Resaca de la Palma, and in other localities below Matamoras; fl. May & June. — Stem 3 to 5 feet high, erect, or ~~often~~ sometimes decumbent, with erect branches; 3 or 4 angled, sometimes at base 5 angled, or rather winged; lowest spines ~~weak if~~ of each bundle weak only 3 or 4 lines long, upper ~~ones or~~ radiating ones 6 or 7 lines long, and ones 12-18 lines long, ~~the longest~~ turned downward, ~~the others~~ sideways; in some specimens the longest spines are not more than 6 lines long.

flowers " large, beautiful, white (others say pale red) nocturnal; fruit of the size of a hen's egg, ~~scarlet~~ outside and pulp scarlet, edible ", seeds numerous, large, perfectly smooth and shining; embryo incurved, cotyledons incumbent, as large as the radicle, no trace of a plumula. — germinating with foliaceous cotyledons, like an Opuntia. — Apparently near Cereus Pitajaya Darg. of Cartagena.

[illegible] a hemisphaerica — — ♀ [illegible] omni praecedentis ortis, ex umbello albidis sordidis, sepalis ~~sub 13~~ [illegible] ~~arcuatis~~, ✱ petalis sub 13, lanceolatis, acutis, [illegible] staminibus 5–8 staminum numerosa excedentibus, flavo- [illegible]; Baccis —

✱ large flowers with entire petals, [illegible]

✱ [illegible] 10 to 12 lines long, and [illegible] 14 [illegible] petals which [illegible] 10 to 16 lines long

Conspectus of Northamerican Mammillariae, [illegible]

§ Berry red, ~~corolla~~ flower deciduous.

†. berry clavate, seeds brown; [illegible] previous year; flowers [illegible] hemisphaerica

††. berry globose, seeds black, flowers sparse in the axills of the tubercles of the same year; flowers [illegible]

§§. berry green, withered flower persistent, seeds brown (always?)

†. flowers sparse from the axills of the tubercles of the same year, seeds scobiculate. intertexta.

††. flowers central from the axills of the tubercles of the same year, seeds smooth (also [illegible]?

[illegible] others sulcate tubercles.

Cactus and other Cactae numbers have been brought here by the [illegible] Our [illegible] Volunteers are expected to bring also many Cactae here when they return this Summer. It will be well to describe them soon before they get into other hands. — Do you know Nuttall's [illegible]

[illegible]

[illegible]

[illegible]

704. Asclepias verticillata L common [illegible] fasciclea root, single or only [illegible] erect stems & linear verticillate leaves. Prairies on the Kanzas, in August.

705. Asclepias verticillata L var. galioides, Jne. many low, spreading stem from the same fasciclea root, leaves almost filiform, crowded. Between San Miguel and Moores Creek, in August.

703. 694 Asclepias verticillata L var tenifolia Jne. At the base of the Mountains about La Ta[illegible] to near Kanzas river, No. 348 Lindheimer 1846 New Braunfels, Texas; Albuquerque, New Mexico, & Wislizenus in July; Arroyo of Matamoras; Northeastern Mexico in May Dr Gregg. — Root simple not fasciclea; stem slender & higher, leaves gene. opposite sometimes [illegible] — [illegible] verticillata, but flow[illegible] distinguishes from A. verticillata therefore not specifically distinct. — But is that the Plant of Kunth? In the German botanic gardens a species is cultivated as A. linifolia [illegible] A. angustifolia Hort Berol. which is widely distinct from our plant, but also distinct from the nearly allied A. angustifolia Ell (A. nitidissima) This last has scattered leaves, long peduncled simple terminal umbels, large flowers, gynostegium distinctly & widely stipitate (not sessile as Decaisne says it) much shorter than the corolla. The gardenplant before mentioned has opposite [illegible] lateral and terminal, ~~with~~ on shorter peduncles, [illegible] smaller [illegible] longer stipitate, somewhat shorter than the corolla. [illegible] var. linifolia this gardenplant is distinguished at first sight by the [illegible] shorter stipitate gynostegium, and by the shorter horns; the [illegible] are very much alike. Both species. Is this gardenplant the true species of Kunth?

702 Asclepias tuberosa L [illegible] Wislizenus has collected the same species near Albuquerque. Introduce here notice of A. Lindheimeri see next page

701 What is that? — Total specimen coll. by F. has been sent to you. [illegible] it in its proper place, if I know or recollect what it is.

Acerates Ell.

I consider myself justified in restraining this genus to the [illegible] which is very natural: Calyx et corolla reflexa, corona [illegible] 5-phylla, foliolis arrectis, margine inflexo corollatis, apice [illegible] processu vestitis.

Folia plerumque sparsa, pro minus pubescentia, scabra, [illegible] mediter pedunculatae, laterales saepissime singulae terminales. Flores virides, folliculi laeves.

699 Acerates viridiflora Ell from the Colorado & Moores Creek, the common form with oval leaves.

695. 697. Acerates viridiflora Ell var lanceolata, with elongated [illegible] all parts of the flower narrower but no other [illegible] Cross Moro river. The same [illegible] by [illegible] 343 Lindheimer 1846

706. Acerates auriculata n. sp. radice crassa cylindrica, [illegible] foliis sparsis linearibus v. filiformibus planis, margine scabris; [illegible] paniculis axillaribus multifloris, pedunculis brevibus; ~~[illegible]~~ [illegible] calycis reflexis pedicellis pilosis cinereis brevioribus, corona staminum foliolis gynostegio globoso subsessili brevioribus apice truncato ~~C~~riter tridentatis, margine involutis, basi [illegible]

cuspidatis; folliculis lanceolatis longe acuminatis, laevibus, glabris.

Near Rabbit ear Creek in prairies; also on the upper Arkansas, Fremont; on the upper Canadian A. Gordon; in sandy soil near Albuquerque Dr Wislizenus, rocky prairies near N. Braunfels, Texas, A. Lindheimer 347. — Stem one to 1–3 feet high, simple or rarely branching; as well as the wide middle nerve of narrower leaves whitish, or glaucous; leaves 3–6 inches long, not revolute, ½ or ½ line wide, rarely wider. ~~Pedicels shorter than the~~ Pedicells; ~~these~~ ½ inch long; peduncules shorter. Gynostegium, in unusual shape, globose; horns very, very as the, rounded, not angular as in most species; pollen masses singular, linear-oblong, curved outward at both ends, shorter of the [illegible] as the cucullus, triangular, very conspicuous. Fruit 3–4 inch[illegible] long. — Resembles somewhat in its rose & general habit A. syrostifolia Dne, and it is also been collected on Des Moines river in Iowa by Ch. Geyer, but the prominent stem, revolute, reticulate leaves distinguish that species even with the flowers; pollen masses in that plant [illegible] & angular [illegible] short.

Asclepias lanuginosa Dne the only true Asclepias with a single terminal umbell has lately been collected by Mr Cornwell in Wisconsin. Its short ~~hairy~~ ascending stem is patulous hairy, but not woolly; structure of the flower resembles Asclepias longifolia but gynostegium sessile. —

Anantherix Nutt. I restitute this old Nuttallian genus and distinguish it from Asclepias, with which Decaisne has united it, by the following characters. Calyx et corolla patula & rotata; corona terminea 5-phylla, foliolis convatis minus patulis, saccato-cucullatis, processu membranaceo semibilocularibus. Folia sparsa plus minus pubescentia; umbellae plerumque breviter pedunculatae terminales, singulae s. aggregatae; corolla virescens, corona staminea saepe varie colorata; folliculi molliter muricati.

Asclepias kinkaimesi (introduce at the end of Asclepias) E. & Gr. in N. Lush. A beautiful specimen was collected by Dr Wislizenus at Galleja springs south of El Paso; lower umbells pedunculed; peduncle often as long as pedicells, upper ones almost sessile. Leaves, as indeed in all the specimens which I have seen, not cordate, but abruptly attenuate into the (½–1 inch long) petiole. Follicles almost glabrous, carinate with soft spines (note setae). — Dr Wislizenus and Dr Gregg collected ~~the~~ same species on the lower Rio Grande and at its mouth; flowers smaller, horns shorter and blunter, but I can discover no other difference. The lobes of the corona staminea are more or less distinctly three lobed. — Is this plant really distinct from the Mexican A. longicornu?

Anantherix paniculatus Nutt [illegible] erecto, [illegible], foliis plerumque sparsis breviter petiolatis, ellipticis s. oblongo-ovatis, obtusis, mucronulatis, glabriusculis, margine scabris; [illegible] apicem binis, pluribus pedunculis pedicellos pubenulos aequantibus s. eis brevioribus; [illegible] ovato-subglobosis; coronae (violaceae) foliolis lobis centrale dimidio brevioribus, patentissimis, gynostegium ovale non aequantibus.

Missouri, Arkansas, Texas, Western prairies as far as Council Grove

in Texas again in Sept.

[illegible] May & June [illegible] appearance of this plant is very [illegible]
Asclepias viridis Torr & Pursh probably refers to another plant. Herb. panicled.
Stem 12–18 inches high, simple or branched; leaves [illegible] 2–4
inches wide & 1/4 inches wide, petioles 8–10 lines long; flowers 12–15
lines in diameter, [illegible] [illegible] [illegible]

[illegible] ties is [illegible] occupied by the [illegible] top of the (
to which [illegible] cells [illegible] the cucullis [illegible]
[illegible] the gyn[illegible] [illegible] connivently curved over it.

In genus Stigma [illegible] (1821. [illegible] not [illegible] Hall. [illegible] same [illegible] of 1818 [illegible] ?) has with Staurostigma the [larger flowers the] curved cuculli with a longitudinal membrane, which forms two incomplete cells; the difference consists in the top of the cucullis which is elongated into an inflexed (not reflexed!) ligula, and in the much elongated [gynostegium] stipe of the gynostegium. In some species of Asclepias and [illegible] a stipe also occurs, but always [origin] the corona staminea which is [illegible] together with the gynostegium [illegible]. Here the corona is sessile and above it the stipe is elevated [illegible] the [illegible] of the gynostegium. The foliola [illegible] of the cuculli [illegible] [forme] just below the anthers [illegible] a true [illegible] appearance [illegible] teeth". These "denticuli" [illegible] anthers 5 [illegible] lobes or "teeth". These [illegible] of [illegible] interjecti are nothing [illegible] same [illegible] (Otaria). [illegible] Asclepiadeae [illegible] not peculiar to the [illegible] development and changed in their relative position [illegible]. These [illegible] at the of the other mentioned stipe. [illegible] they are 4 ([illegible] of each [illegible], [illegible] 20 [illegible] [illegible] 5 [illegible] in other instances they are united into one [illegible] ([illegible] paniculata); [illegible] Stigma [illegible] alternating with them.
[illegible] at the base of the [illegible]

lobis oblongo-lanceolatis obtusiusculis, margine incrassatis; corona-
foliolis arrectis, planiusculis apice subaequaliter bilobis, [illegible]
globoso-depressum aequantibus. Folliculis lanceolatis, acuminatis, [illegible]

Lower shrubs in the bottom woods of the upper Guadaloupe, Texas. T. Lindheimer
502 [illegible] Sept. — Apparently very near the [illegible] species of Mexico
which occurs north of the Isthmus of Panama. L. Jacquini; but that
has oval leaves. In the [illegible] ~~rim of the crown cuculli~~ tooth of the lobes
of the corona is elongated. [illegible] similar to those of [illegible]
[illegible] lines and 2 [illegible] with a [illegible] [illegible]
[illegible] inches long pedicells [illegible]
[illegible] are oval, 3-toothed at the apex; [illegible] tooth
as much larger than the lateral ones. Middle part of the anthers more
prominent than the cartilaginous wings — an unusual occurrence
in Asclepiadeae. Corona-scales almost terete, linear-oblong, slightly
curved.

Sarcostemma R. Br. (Cpt. Vol. VIII. 5.) [illegible] follows [illegible]
with the others ~~have~~ described by [illegible] a peculiar color of the [illegible]
genus. They all agree in having a small [illegible] extending [illegible]
[illegible] the throat of the corolla [illegible]
membranous fold of the [illegible] itself) and [illegible] of the
interior corona of the length of the short, spreading, quadrangular [illegible]
Pollen-masses also all alike, [illegible] long, slight curve, [illegible]
acuminate at the upper end.

Sarcostemma texana n. sp. [illegible] cuspidatis, glabris; [illegible]
[illegible] tubes [illegible] extus ~~parce~~ ~~pubescentibus~~ intus parce papillosa
[illegible] corona interioris lobis inflatis, globosis [illegible] margine
[illegible] corollae.

In the thickets in Western Texas, T. Lindheimer 503, — Fl. September
[illegible] 1-1½ [illegible] occupy cavities. Peduncles 7-14 l.
[illegible] 6-7 l. [illegible] flowers 6 l. in diameter, white; lobes of corolla
[illegible] that species [illegible] or right, and short
[illegible] left margin, obtusish.

Sarcostemma heterophyllum n. sp. volubile, caule [illegible] petiolatis
superioribus linearibus, cordatis, hastatis, superioribus linearibus, [illegible]
pedunculis glabris elongatis foliis superantibus; pedicellis calycibusque
pubescentibus; corolla rotata glabra, margine [illegible]; corona
interioris lobis ovato-globosis, gynostegio subbreviores.

South of Chihuahua (Bachimpa & San Pablo) Dr. Wislizenus
[illegible] end of April. — Lower leaves 1½ inches long, narrow, [illegible]
cordate-hastate; upper [illegible] 1-1¼ inches long, linear sometimes [illegible]
widened at base; petioles 2-4 lines long; peduncles 1½-1¾ inch [illegible]
4-5 lines l. flowers 6 l. in diameter, corolla [illegible] purple, [illegible]
on margin white; corona pale yellow. — Evidently near the Mexican

Roulinia Dne. DC prod VIII. 516.

R. dinobimeri n. sp. lilabilis ramis virgineis pubentibus, foliis late ovatis, basi cuneatissimis auriculato-cordatis; pedunculis racemosis plumis subaequantibus, cum pedicellis brevissimis inconspicuis; corollae rotatae

Anantherix connivens (Arlepias connivens Walt. Acerates connivens Ruf.)
Anantherix viridis Walt.) the species of which neither genus the genus
Anantherix can not be separated from the three following species, the g.
it differs in some respects. The corolla is spreading, at first somewhat
reflexed; the corolla are not entirely closed at the second
[illegible] tubes; the pollen masses, which in the other genus
are erect are not [illegible] but are [illegible] appressed to a slender stipe at least
twice as long as they themselves. The species, only [illegible] in the south

Sled · April 11th [illegible]

My dear Sir

I have been working away all year this long time, [illegible] adding and making bill it [illegible] a package. [illegible] I [illegible] spiders exist [illegible] as to most of the species [illegible] some of them [illegible] of the genus Arthrix, [illegible] I may [illegible] approve.

2. Euphorbiaceae. [illegible] species of Euphorbia & Pedilanthus and a short systematic conspectus of the peltoid Euphorbiae, which I had prepared long since, and now improved and enlarged, if we may and shortly characterizes some new species, which I should like to publish in that way, in a note.

3. Rhamnaceae. [illegible] parables, [illegible] of [illegible] Lindh [illegible] two new species. C. reticulatus [illegible] have called refractus if that name was not too near [illegible].

4. Cyperaceae. [illegible] with a rich addition, I enclose now [illegible] Cyperus [illegible] and we have seen 6 of them for [illegible] familiarize and [illegible] conspectus of them. I think will be found [illegible] the books that I have seen [illegible] has yet been established [illegible] most of the plants [illegible] known in flower and fruit. — In regard to the [illegible] published in N. L. I have made large and [illegible] corrections and I have here [illegible] [illegible] so of the [illegible] Cyperaceae.

[illegible] this [illegible] Carex [illegible] it [illegible] — [illegible] be able to [illegible] [illegible] period for sale in the set and by the [illegible] that I shall have the second [illegible] place [illegible] shall very be partly [illegible] place [illegible] again at [illegible].

[illegible] sheet of drawings you will find the [illegible] Cereus [illegible] and last [illegible] leaving [illegible] Cereus [illegible] [illegible] stig. —

Very truly [illegible]

[illegible]

Tell Agassiz if still in Boston, that I have begun the collect fishes, but that some are very high, our eels for example from 1.00 to 1.50 a piece. I shall give such prices and for many species [illegible] — a few of each. (Cheaper more of them) [illegible] whether [illegible] Tendlers rather appear. No news from Tandler none from the Californians [illegible] the [illegible] of the enrollments in Mexico.

Plants out of
Engelmann's last letter.

[illegible] '47.

I have received from Dr Gregg a package of plants collected near Monterey by Dr Sallis the year. — Dr Short has got a similar package and informs me, that he has to you. Some of the plants are of great interest to me just at this moment, & I make some remarks about them. You will have fo. & some Lon.s which are identical with plants collected by Lindheimer, and prove ~~that~~ the geographic extent, and all appear to me to prove that this part of Mexico is much less known than the central states of that republic, and perhaps as little as the Rio grande Valley.

It would be worth while for one well conversant with Mexican botany ~~to~~ to give a history of all expeditions made to explore that country and to collect precise data, as to where the collectors of these their plants.

„Agrito" from Saltillo is our Berberis fo. Lindheimer!

„Garbanzillo" between Monterey & Saltillo is our Evergreen Sophora

„Guizache" is probably Acacia Farnesiana; abundant from San A. to Saltillo! and most certainly native!

Many mimoseae, unknown to me.

Mezquite" Algarobia glandulosa Saltillo

A plant without name, „cliffs" near Saltillo, Dec. 28th is undoubtedly a congener of Lindheimer's No. 120 (1846), which also grows on inaccessible cliffs. They are probably Loasaceous plants but hardly a true Mentzelia; hairs also not barbed. In the Saltillo plant the flowers are much smaller, and the stamens are not much longer than the petals.

Viguiera tomentosum DC. only on Algarobia (and other Mimoseae Dec. Collected also by Berlandier!

Cortadilla" Saltillo, is probably similar to Lindh. 213.

„Lechuguilla" is perhaps near Lindh. 212 „fibrous leaves for ropes"

„Sotol" is almost the same as L. 212, root (must be the ovate or subglobose trunc) roasted, a pleasant food. Lindheimer plant has also you know a similar trunc, which undoubtedly is also farinaceous, sago-like.

Besides these, which are interesting on account of their identity or similarity to Texan plants, the collection contains some other most interesting, e.g.

„Guajacan" which appears to me to be an undescribed species of Guajacum — no flowers, but ripe fruit

„Gobernadora" a shrub with flower & unripe fruit, is also a zygophylaceous plant, perhaps a Larrea

Prof Asa Gray
Cambridge
Mass

One of the most interesting and pleasant things is what Dr Gregg calls "Cliff rose" from Saltillo; a cousin of mine, wounded at Buena Vista, who sends occasionally some seeds, has also remarked the same plant, called it "Rock-rose", and says it is highly odorous. Unfortunately his seeds are not quite ripe, but well enough developped for examination. The plant must be an undescribed genus, near Cowania but well distinguished by the decidedly imbricate calyx.

I would call it after its discoverer, the author of the valuable work "the Commerce of the Prairies" Greggia — as Greggia Gaertn is according to Endlicher synonymous with Eugenia.

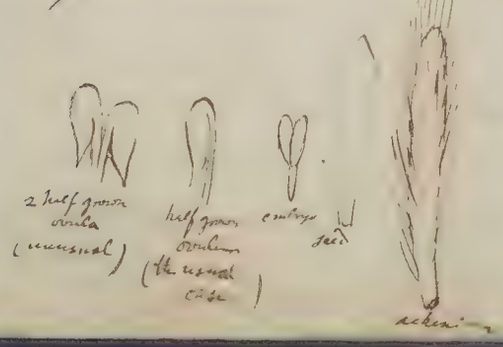
Greggia. Calyx tubulosus, 5-lobus, lobis imbricatis; petala 5 cum staminibus numerosissimis calycis faci inserta (rosacea); ovaria plura, in fundo calycis inserta, 1-rarius 2-ovulata; stylus villosus, stigma nudum; ovula supra basin ovarii lateraliter inserta, anatropa; achenia villosa; semen unicum erectum; embryo radicula infera.

Frutex mexicanus, foliis parvis, cuneatis grosse dentatis, stipulis adnatis, floribus rosaceis odoratissimis.

Greggia repestris fruticosa, foliis cuneatis, apice truncatis, grosse dentatis, margine revolutis, supra glabris, subtus tomentosis; stipulis adnatis, apice libero triangularibus; floribus solitariis lateralibus, breviter pedunculatis.

Cliffs near Saltillo and Buena Vista. Dr Josiah Gregg; collected in flower and fruit about Christmas. — A roaceous shrub, nearly related to Cowania but distinguished from it by the imbricate and not valvate calyx and also by the red flowers. Several feet high, much branched, leaves (crowded) about 6 lines long, and 3 lines wide; flowers terminal on short lateral branchlets 15 to 18 lines in diameter; achenia linear, slightly curved, very villous partly included in the tube of the persistent calyx. — ~~I can not~~ I name this ornamental plant after its discoverer, ~~Dr J. Gregg~~ my highly valued friend Dr J. Gregg, the author of that interesting work "the Commerce of the Prairies", who now devotes his leisure hours to promote our knowledge of the ~~northern province~~ natural history of the northern provinces of Mexico; and to whose kindness my herbarium owes a great number of rare and new plants.

If you think proper, and the genus is actually new (certainly not in Decandolle or Endlicher) I should like to have this sketch published say in Silliman Journal. I should like to prove to Dr Gregg that his labors are not valueless, and that they are appreciated, and I like to send him a copy.



Since writing the [illegible]

Schoharie May 11th 1851

My dear Doctor

I have now two letters from you unanswered and must hasten to keep up with the business. First let me ask you whether you got a parcel which a friend of mine took to Washington City last November and sent it from there to you. It contained seeds for you & Rooker collected by Lindheimer last summer. I found no notice of it in your letters.

Day before yesterday I got at the same time as your a letter from Lindheimer dated March 31st. In that letter he says that about 4 weeks before – in the first days of March he has sent to Ferguson & Hessier at Lavaca 3 boxes and 2 barrels with live plants for you which to collect he has laboured at least one month, he says, and he leaves you and Mr Powell to put the value on them. Mrs F & H were instructed to send it to Boston or New York, or wait for a direct opportunity. Now offered to New Orleans to — Buddecke (who sends my things always) to him to be re-shipped. But as your letter of April 29th does not mention any thing of these boxes, I am afraid that some mishap has again befallen them. – Lindheimer gives the following list of the contents.

I. A Box with No 1. a specimen of large female plant of 212
2. 3. " " male "
3. 2. " of same plant, which had not flowered

II. A Barrel 4. a large monocotyledonous plant from the Cibolo 7 specimens, sex not known
5. a Crotonaceous shrub
6. an euphorbiaceous shrub male and female plants
7. Yucca filamentosa bul with stem
8. Rhus "sempervirens" n. sp. also in Herbarium.
9. Sophora – the large evergreen tree with blue flowers.
10. A dioicous monocotyledonous plant 5 specimens
11. Yucca "rupestris" 5 specimens
1. two very small young specimens
12. Vernonia Lindheimeri 2 specs.
13. Berberis

III. A Box ~~9. Sophora~~ 14. Prunus Tawakonia
~~14.~~ 9. Sophora (sempervirens) several sp.
13. Berberis
10 dioicous monocotyled 4 sp.
6. Croton or euphorbiaceous shrub
15 Cassia 12. Vernonia Lindheimeri.
16 Malvacea suffruticosa 3 specs.
17 Lantana Caimanica

as soon as spring opens, so I may expect them soon — Lindheimer has sent me a drawing of a new dwarf Cereus now the Rhano so that we have discoveries before us in this branch also.

No 125 Ehretia is only here in 2 specimens, so I could not distribute it! Many others are in the same predicament — I could not distribute, anywhere, where not at least 6 or 8 or 10 specimens were sent by each. — But it is my wish, if it can be done, to describe all the new ones in notes, even if they can not be distributed, to preclude others from doing it — as the Bonn variety is in the field now. Lindheimer says that he does not fear their competition, but still it will be well to do what we can: — Notice all such closely as you did in the first Catalogue of Heterocalon Calophanes linearis and others. — I wish you would look through your whole Texan Collection and notice all new or very remarkable plants in that way. —

I must have sent you the Yucca baccata, and the last time also with some withered male flowers — then got the wood also — and I see from Lindh. Catalogue that he sends you live plants! —

I have collected many things for Gray, but not as much as I hoped — our fish markets were poorly supplied this spring — and I can not get those fishermen for love or money to bring me any thing out of their routine; some of the most interesting fishes are regularly thrown away as unfit to eat — but they will not bring them to me! —

It would be best if Lindheimer would send his live plants to Lowell's agent in New Orleans, he can always get them there in Spring, and it will then be the agent's care to get them on as quick as possible to Boston.

I have great fears about the present collection, if it is not in your hands already, most of it must be spoiled. —

I shall put aside a set of the woods for Lowell. Pray if you would give me some information about the shape of the trees — whether they are good, or how you

would prefer them — if you believe that a Linnæan can make any thing with them, I will get them to procure complete sets next winter. He can get at least 50 different kinds. —

In my last letter are different enquiries, which you have not touched in your answers. I wish you would look over them if you have leisure and notice them when you happen to come to New York. I would be much obliged to you to settle my accounts with Riley & Rehman. Is it your advice about Prince's critical paper on Fevers? But I have hardly time to translate now.

I have sent you a pretty complete set of Lindheimer's plants of 45 & 46. Only a few are omitted because they have been sent before, and of a very few only one specimen was received. — I can not conceive how so many should be wanting in your set. It must be some mistake on your side I should judge. For I have marked in Lindheimer's Catalogue all those, which I have sent you, and I find, that I put aside for you —

342. Rhus trosmia maxima 250 Lindh. coll. 1846.
344 Rhus capallina, male flowers, entire leaflet
345 Rh. cop. is just narrow but serrate leaflet } 243 a & b. L. coll. 1846
346. Melon — sent to you in the coll of 1845 as No 413 and again in that of 1846 as 240 — now how is it possible that you should twice miss this plant, if there was not some mistake or other?
350. Malva No 241. Lind. coll 1846
367. Galactia or something like it 265 L. coll 1846 one with small th
368. " Do. and Desmodium 264 " " " other with larger leaves, a third with very leaves has been sent twice to you.
355 Melochia 1845 L. sent one specimen, No 505 which I did not communicate, but of coll 1846 you got one or two fine specimens under No 257.
384 Mimosea 272. (1846)
386 " " 32 (1846)
389 a pubescent Lythraceous plant? not examined by me but (I know) of which you must have got at least 2 specimens, No 337.
448. Lobelia texensis No 342 1846 is the only one, which I have not sent you — and you got it before me last summer among the other Houston plants.
46 Erythræa texensis N. 31 [illegible] you [illegible]

St[illegible]

[illegible] Dear Sir

[illegible]

[illegible] specimens of [illegible]

[illegible] with the [illegible] --- [illegible]

[illegible]

[illegible]

[illegible]

[illegible] you will [illegible]

[illegible] has [illegible]

in the [illegible]

[illegible]

[illegible]

the [illegible]

Southern [illegible]

[illegible] the Mountains of Texas [illegible] commence.

The great event of the month with me, however, is the arrival of a large box from Chihuahua sent by my former [illegible] [illegible] [illegible] [illegible] [illegible] before. He [illegible]

[illegible]

[illegible] --- [illegible] he wrote from Chihuahua in the [illegible]

and I heard nothing more from him till after the capture of Chihuahua, when after a [illegible] [illegible] must be [illegible], and [illegible] to send [illegible] collection of [illegible] & [illegible]

[illegible] and Chihuahua and west of Chihuahua
in the [illegible], the principal study [illegible] Geology
and mineralogy, but knowing my predilection for
botany he has sent a large number of living
Cacti, some seeds [illegible] dried plants,
and there are really a delight to look at [illegible]
about 200 species [illegible] are 3 [illegible]
here [illegible] to complete
[illegible] Mexico [illegible] thousand [illegible]
([illegible] common [illegible] European [illegible]
[illegible] others — [illegible]
[illegible]
curious [illegible] I suppose that Dr. [illegible] went with
Doniphan from Chihuahua to Saltillo and [illegible]
occasion to botanize through that unknown region,
and will send rich things from there. — We
must try to publish "plantae Greggianae"
"plantae Wislizenianae" etc. and not leave
that to Europeans, but follow up the conquests
of our valorous backwoodsmen by the conquest
of Science!

Dr. [illegible] has sent 12 to 15 Cacti, not one of them
identical with the Texas plants or [illegible] before
the Opuntia is similar to the fragilis, but with [illegible]
long tunicated spines [illegible] beautiful Mam-
millariae, Cerei, Echinocacti, some of them
remarkable [illegible] spines, many [illegible]
hidden under the mass of spines! — Some are
dead, but many will survive; [illegible] pressed
and dried the flowers, [illegible]
[illegible] dead, [illegible] found plenty of fruit [illegible]
[illegible] seeds of the [illegible]; both of which [illegible]
[illegible] here [illegible] with [illegible]
(under glass) one week [illegible] coming up
[illegible]! — This monstrous Echinocactus [illegible]
[illegible] E. Wislizeni.
[illegible]
bundle ([illegible] fragments of [illegible]
spines, [illegible]) [illegible]
[illegible]

[illegible]
[illegible]
barrel Cacti [illegible] species. — I expect them
daily, and must have many [illegible]!
[illegible] time to study [illegible]
[illegible] things which I have
[illegible]!

Yours truly
[illegible]

I shall send you the [illegible]
[illegible] things that [illegible]

Prof. Isa Craig

Cambridge Mass

[illegible]

[illegible]

[illegible]

Prof Asa Gray

Cambridge Mass

St Louis Sept 4th 1851

My Dear Gray

[illegible] agreeably surprised to see by
a letter from you [illegible] that [illegible]
with [illegible] time, [illegible] expected
it, [illegible] [illegible] time would [illegible]
with my pupils [illegible] so [illegible] that
I have not been able to devote as much to
Botany. [illegible] only [illegible] that
I look at [illegible] [illegible] [illegible]
[illegible] country. In that way
I have found Kochia scoparia! & Chenopodium
anthelminthicum on the Banks of the Mississippi, & also both Xanthium with intermediate forms & gathered
either the [illegible] or hybrids — probably the latter.
I had no opportunity [illegible] [illegible]
point — [illegible] [illegible] [illegible]
I have now seen of the former specimens [illegible]
[illegible]; the latter I have not seen and yet
— the former seems to [illegible] [illegible]
both distinct — that with pointed fruit is probably
[illegible] — the other is [illegible] [illegible]
[illegible] [illegible] [illegible] yet [illegible] to extend
your [illegible] — or as we have been to say
transition (?) specimen — [illegible]
[illegible] [illegible] figures [illegible]
[illegible] [illegible] specimens [illegible] — ripe fruit of [illegible]

[illegible] They must be
[illegible] care be taken that they do not
[illegible] past forever [illegible] important change
[illegible] Chemistry [illegible] were [illegible] were [illegible] of
[illegible] time.

[illegible] seed [illegible] sorry, [illegible]
[illegible] letters I have got flowers of the
great Silene [illegible] Cistus [illegible] Passaverine
[illegible] very [illegible] ! I [illegible] one [illegible]
[illegible] plants growing. [illegible] also a new Mimulus
[illegible] I need not [illegible] M. angustiflorus
[illegible] first [illegible] Diligency
[illegible] the Mexicans [illegible] six weeks, [illegible] a few
[illegible] one [illegible] for the [illegible] plant — the offspring
[illegible] flowers [illegible] to Russian Cypress, but perhaps
[illegible] I have not [illegible] it. I shall get seed. Will Cypress
[illegible] dark [illegible] are [illegible], both
[illegible] by the [illegible] complete the [illegible]. But I have
not [illegible] them. The box of seed to the Keys sent
[illegible] 246 lg. 10. has arrived 4 weeks ago —
[illegible] splendid — but less strange than the Chilean
[illegible] Cactus most splendid with large dark crimson
[illegible] flowers — all alive !! but most of the seeds are
[illegible] — I hope save a few.

Scarlet writes that he sent to Fort Leavenworth
[illegible] and a barrel in April — the Quarter —
[illegible] there says nothing has arrived !
[illegible] last at got my $100 — was

(Gesnerian (from the same for Meeting!)

[illegible] stuffed, and [illegible] others as soon as [illegible] money
[illegible] sent [illegible] [illegible] my money has arrived
[illegible] — [illegible] pieces [illegible] money [illegible] the returns
[illegible] Texas say that he is very industrious & [illegible]
[illegible] have no letters from him later than April.
[illegible] money they say [illegible] Fraser (this
[illegible] I should [illegible] is a new species — they call
it F. [illegible]. Have you Carolina specimens to
compare them [illegible] is [illegible] !

Thanks for your undeserved kindness to make
me further the Asclepias Sullivantii. The root
of Manual, sent a few weeks ago was the only proof
I had of your health and activity for a long time.

Have you got the waiting part of Gladiolus?
Do let me know. I can do nothing now, [illegible]
[illegible] will be [illegible] distribution in October.
[illegible] for more notes from many, I need
Master distribution and can do nothing else
I do not know whether I have sent you notes
on Carlene & Cerastium ?

My Cereus conspicuus is Echinopsis pectinata [illegible]
[illegible] certainly no true Echinopsis — of which genus we
have here Echinocereus in Collin. They are all distinct
from Cereus but by the stigma — very glorious
cut our plant constitutes with 6 or 8 species of
N. Mexico & North Mexico a most distinguished genus

Mr. Teale Echinaster intermedius Brown. I do not consider
Cereus — I see the trace of a very light indentation of
pericarp of cactus by the ~~calyx~~ embryos — but have not
seen enough to satisfy myself — Thank Dr. Torrey
kindly for your seeds — I want more seeds of Cereus
& of others — If that batch of coral among your seeds is
from the fruit — it is probably an Echinocactus or Echinocereus
such as grows on the Cactus — I have never seen a Melocactus
until I met or seed — except the seed — Echinocereus
Echinaster is the northern representative of Cereus; it is very
rare in Santa Fe — other in Chihuahua &c. not known to
me — I know no Cereus north of the one in Southern
Texas, the other south of Rio Grande — the only
one which I have got among 30 species I have raised
confirm positive the other Echinocactus & Echinaster
I know I have a specimen of the Mathesian Mammillaria
Opuntia from Upper Missouri, very much like my
M. similis — also an Opuntia from Upper Missouri, and
another perox! I will know. — The cactus of
Long's expedition mentioned in Flora as Cereus must
be a cylindrical branching Opuntia, common on the Plains
I suppose, there 5 — 8 feet high but north south 20-40
Is Opuntia ferox (or Missouriensis) growing with you?
The cactus seeds from Wilcox have germinated
with me; I put them in moist sandy soil in a
wine glass, and covered them closely by a watch glass —
they germinated nearly in 2 days! Some of these
seeds have germinated after having been in the box &
(in flower pots) from 2 or 3 to 5 or 6 months (Thought don't throw away flower pots with Cactus seeds but wait 12-18 months)
the same in the wine glasses in one or two weeks!
I have cultivated Portulacca pilosa — very different
from the common garden plant — the name of which I don't
know; I formerly thought them identical
Is Weisner right as to the identity of Polygonum scandens & cuneatum?
I think in the Polygonums hydropiper, punctatum &c make sad confusion
in your seeds of the cacti. Yours truly G. Engelmann

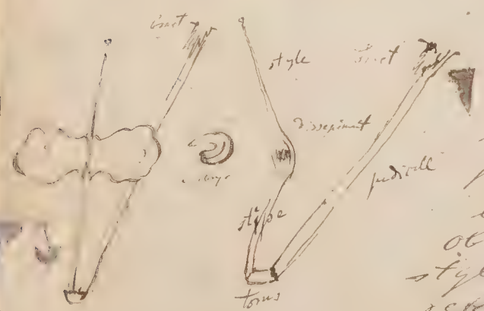
Bilbicum n. gen. near Lindella, but more so perhaps near Cremocarpus, [illegible] basi aequalibus patulis; petalis (albis) unguiculatis, limbo obovato [illegible] stamina 6 tetragynaria; stylo subnullo, stigmate conico subbilobo; siliculis a latere plano compressis, basi et apice emarginatis, stylo brevissimo crasso stigmatibus coronatis; valvis orbiculatis dorso alatis; facie classis (!) e dissepimento lineari, apice pendulis; seminibus horizontalibus in loculis solitariis.

Herba biennis (annua?) novo mexicana stellato canescens, caule erecto ramoso, foliis sinuato-dentatis, floribus albis pedicellatis, racemo [illegible] pauciflorus elongato.

B. gaunefolium. Jornada del Muerto: [illegible] a foot high etc — flowers white, about 3 lines diameter. Seeds horizontally attached [illegible] closed at their attachment on the pendulous solid dissepiment.

Hunnemannia (what is the specific name?) [illegible] Chorisis sp. nov. Texas near Saltillo. [illegible]

Wislizenia n. gen. Calyx 4 sepalus; petala 4 oblonga inaequalia unguiculata imo toro inserta; stamina 6 toro cylindrico inserta; filamenta filiformia longe exserta, aestivatione inflexa; ovarium longe stipitatum, globoso-didymum, biloculare, loculis 2 ovulatis; stylo [illegible] elongato stigmate globoso. Capsula siliculaeformis, didyma, tuberculata, cum stipite in adelphum filiformem exserta, bilocularis, loculis [illegible] spermis; vel is unicum ab dissepimento pertuso solutis semen includentibus; semen conduplicato-reniforme, laeve; cotyledones radiculae superne incumbentes.



Herba n. mexicana (annua?) ramosissima glaucescens. Cleomidae facie, foliis ternatis, stipulis distinctis laciniato-fimbriatis, bractei laciniatis, racemis demum elongatis pedicellis filiformibus patentibus, floribus luteis, sepalis brevibus acuminatis, petalis obtusis breviter unguiculatis, stipitibus stylum persistentem aequantibus, cum capsula separatis.

Wislizenia cleomoides. Near El Paso on the Rio Grande. An interesting and quite anomalous genus of Cleomeae; stipules are very distinct from similar; fruit resembling the fruit of Serebiera, the valves remain open, but their arcuate shape prevents the seed from falling out. Placentae forming a complete persistent dissepiment, which only in the perfectly ripe state becomes perforated in the centre; on both sides of the small opening the remnants of both funiculi are to be seen.

Silene Chihuahuana n. sp. Near S. multicaulis Nutt, but ovary and petals 4–6 partite — also near S. Wislizenii DC [illegible]

Linum rigidum n. sp. leaves longer, flowers larger than in the common plant, sepals persistent half as long as petals; seed twice as large as in Tel. tortifolium. — I have it growing, after having been in the herbarium the month! Fendler has collected a third species if I am not mistaken. —

Linum aristatum n. sp. near L. Berlandieri. Styles united, sepals aristate, root lignescens perennial!

Geranium leucanthum n. sp. near albiflorum, also perhaps near G. Hernandezii; petals entire, seeds tenuissime rugosis.

G. gracile n. sp. near incisum Nutt? seed orbiculate; fl. red near G. mexicanum HBK.?

G. pentagynum n. sp. near maculatum but well distinguished from all species examined by the styles being not divided down to the ovary.

Larrea glutinosa n. sp. common from Paso to Monterey, already described?

Guajacum angustifolia n. sp. Parras to Matamoras and Nuevo Laredo (Lindheimer); fol. 4–8 jugis, glabrescentibus foliolis oblongo-linearibus parvis.

Tetia crenata n. sp. leaflets small with large dots; crenate, coriaceous, samaras ovatae — Parras — Buenavista — = R. pentandra DC?

I have only got so far, and can continue the work only an hour or so a day, and make slow progress; the difficulty is sometimes the incomplete descriptions to compare (Oxalis, Gerania etc) and — especially in regard to the plants from the lower Rio Grande and Saltillo — the ~~difficulty~~ circumstance that many have no doubt been described by Moricand and perhaps others — those from Chihuahua, Santa Fe and especially Cosiquiriachi (Maximilian 80 miles west of Chihuahua) are probably all undescribed if not in your flora. But Wislizenus wants to have my report in 2 weeks and I believe I must give it up to describe many more.

Nov. 14th

I have just written the above lines and will send them off without any more delay. A few words about Fendler's Collection.

They are now nearly arranged and the specimens counted. His collections contain about 1000 species — but perhaps not more than 300 with 30 or more specimens, many with only a single one. They were all in the greatest confusion and it took a long time to arrange them as sometimes the specimens of one species were in 10 or 15 different packages — so he has collected perhaps 80 or 100 of one and 10 or 15 of another species — but the specimens are fine and mostly very complete. I am just putting out a collection for Fendler, for you and for myself, the rest to be distributed first to the few subscribers who have paid beforehand, and the balance to other subscribers. As soon as I am done with the selection I shall send the plants to you and they must be worked up rapidly, as Fendler is going to distribute them in the shortest

Mr. Abraham Lincoln
Springfield
Sangamon County
Illinois

Austin, Decr 3.

Austin Nov 20th 1847

My dear Doctor

Some days ago I wrote you a long deferred letter, addressing you as Leaden Avenue at Mobile of course, that will be sent to you in about 2 weeks, when Dr Wislizenus will take with him what I can by that time put out for you. Pity that some interesting plants are only in single specimens.

Wislizenus has asked me to write some short essay for him on the cacti — but I am badly situated, to do it, as it is impossible to compare what has been done by others.

Mimosaceae I can find in Torr. & Gray (as I wrote in the letter set from you a few weeks ago) Cephalocereus and the near relations in the last volume of Pl. Fremontianae and Chiapas of which there are about 8 species in this collection — and any other remarks I really am at a loss what to do with. Some I can not find probably from want of skill, one I must refer to you — and that is the principal object of this letter, in which I include fragments of this singular plant.

It is a very conspicuous plant from north of Chihuahua to Saltillo; it is said to be shrubby, but almost always without branches, from

5 to 20 and 30 feet high, a single stem, from
½ to 1 foot in diameter — covered with spines, in
the axills of which are fasciculi of spathulate
smooth entire leaves, and towards the top panicles
of bright red flowers. Fauquier

The plant is too ~~much~~ common where it grows, to
be unknown, and I can not find it not even
determine the exactly to which it may belong!
If now I should desire to name it after Wight
as it is such a remarkable inhabitant of the
regions traversed by him.

Can you tell me soon what you know or
can learn about it?

Calyx 5 partitus laciniis ovato orbiculatis, imbricatis,
scariosis.

Corolla vix tubulosa, limbo 5 lobo patente, aestivatione
imbricato-contorta (twisted, always so: ⊙ or ⊙

stamina 15 cum corolla inserta, et ejus tubo
et inter se, ?, parte cohaerentia, basi in ovarium fornice
villosum formantia —

antherae basi rotundatae imo dorso affixae, introrsae,
longitudinaliter apertae, apiculatae

ovarium superum, 3 loculare, multiovulatum,
placentis centralis

Stylus 1 profunde 3 partitus.

Capsula denum unilocularis, 3 valvis,
placenta centralis, triangularis (the dorsal ones 4
apparently disappear before maturity. I have no
half-grown capsules to examine — nor can I ascertain
the mode of attachment of the ovula or seeds.)

Semina compressa, arillo? in minimis ovis
illum basi cordatum formante

Cotyledones incumbentes, rectae, cotyledonibus
magnis radicula infera —

It is one of the few gamopetalous plants
with a large number of stamina; this as well as
the position of the stamina would bring it near
Cucurbitaceae — but other characters appear to
approach it to Convolvulaceae ?

Give me your opinion in a few words.

Where do I find Moricand's work on
North American plants? Are there any other
books or pamphlets?

I have sent seed and hope to obtain it.

Wight has also collected for specimens of
Leucophyllum, but I doubt whether there are
two different species as Bentham says. I have
it growing.

My genus Bilobium is probably the Iberis?
Torrey & Gray's plants — which I do not see
mentioned in your Flora

Yours truly

G. Engelmann

Prof Asa Gray
Cambridge
Mass.

Recd. Dec. 6

St Louis Nov. 26 1871

My Dear Doctor

A few days ago I sent you a singular and at that time to me unknown plant; I have today, examined it again and ransacked over my books again and come to the conclusion that I have made a most beautiful discovery; it is a Fouquiera and the specimens are so complete, that I can now establish the fact, that Fouquiera & Bronnia are one and the same genus! It is true I have not got the unripe fruit, which would be well to see but it matters not, it must be so:

section of ovary 1. unripe capsule 2. ripe capsule 3.

1 is Fouquiera, lateral placentae not united in the centre

2. is Bronnia central placenta, separated from the valves

but as we have 1 and 3 on the same plant, there must have been a 2 in other words the placentae unite after fecundation and finally separate from the valves!

Fouquiera Kunth Char. emendat. Calyx: ... cor. ... aestivatione incompleta in torta (only the 3 outer lobes contort) Stamina 10–15 .... Ovarium 1-unum sessile placentis 3 parietalibus ad centrum productis neque connatis (inde ovario incomplete tricoulari) ovulis sub-18 ascendentibus, in quaque placenta 6 biseriatis; stylus 1 filiformis trifidus. Capsula coriacea loculicide 3 valvis, placentis demum in margine ventrali connatis et a valvis solutis — singulam placentam in tabellam triangularem referentibus; Semina 3 s. plura, ∞, lunata alata, albumine tenuis, embryone magno recto cotyledonibus planis, radicula brevi infera

X. Eufouqueria Slam. 12. inferne villosa, ovarium placentis veinis centrum liberis uniloculare; ovula 18; stylus apice 3-partitus. Capsula — (1 kin. th.)

1. E. formosa h; ramosa spinis brevissimis foliis plerumque solitariis oblongis subcarnosis; floribus sessilibus aorte spicatis.

XX. Acladus Slam. 15. inferne villosa, ovarium placentis veinis centrum liberis incomplete 3loculare, ovula 18. stylus albus medium 3partitus semina sub-6 plerum fimbriato alata, ~~radicula supera~~

2. A. splendens nihi putidosa simplex, spinis longioribus foliis glabris fasciculatis obovato-spathulatis membranaceis; floribus bractea pedicellatis paniculato thyrsoideis

XXX. Bonnia K. Slam 10 — ovarium — capsula 3locularis placentis e tali domum liberis; semina 3 membranaceo-alata. ~~radicula infera~~ K.

3. B. spinosa K. arborea ramosa spinis longioribus foliis plerumque fasciculatis obovato-oblongis membranaceis; floribus pedicellatis corymboso-paniculatis.

— Seems grows from N Mexico (Jornada del Muerto) to Chihuahua across & Saltillo, always as Dr th. asserts in single stems 10 to 20 or 30 feet high, but never branched (!!)

The very interesting plant is Koeberlinia (vide End Cyclop Gen) but unfortunately without fruit. — I would have looked for it in vain never thinking to hunt for it amongst Pittosporeae! —

A Capparea is also here, several Hiraea, many Rhamneae some Euphorbiaceous shrubs — but of no more! I must speak in particular.

— singular small plant, which just before flowering might be taken for a Parnassia, or a Cacthe, but soon after the sides of the flower elongates, like an Aquilegia — but when we come to examine it closely, it proves to be quite a different thing, most probably the nearest relative of Saururus! — In Meadows south of Santa Fe, but Fendler has not seen it. Oval long petiolate radical leaves, scape with one leaf (almost sessile and probably afterwards branching from the axil); involucrum of 6 white petaloid ~~leaves~~ bracts including the spadix which is covered by small spathulate bracts in their axils naked flowers 6 stami — 2-3 ovaries immersed ovula? No fruit seen. Whole plant 6 or 8 inches high. Provided it is new, in which I have little doubt, it might be called Brachyurus parnassiifolius. I shall have a spare specimen for you.

Dr Wislizenus will leave here next week for Philad. & New York, partly to sell to a bookseller his narrative of his expedition, which is very interesting, and has attached to it a good map and profile which is based on numerous & correct observations, and different from the former maps. — I will give him a set of Fendlers plants for you — as far as selected (the others I shall send by Merchants about N Year) also some duplicates of his own plants. He will stay some time in N York and any thing directed to the care of Wm von Eichthal Editor of the Deutsche Schnellpost, New York will reach him and through him me, so he will probably return in safety. ...

As soon as W. is gone I shall get at Fendlers Plants, & shall probably write soon again.

Yours truly

Engelmann

In the drawing I made in my last letter I put the embryo of Pinguicula right out the seed is covered the others ought to be denoted upwards

Prof. Asa Gray
Cambridge Mass

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Mexico & California. Please spare me a few words, [illegible] ? Is there also exclusively on the same species? [illegible] The European appears to be also confined to the Sierra Nevadas — I have in my general letter to Prof. Gray noted that 281 was also an Oreothlypis as well as all Beaufiles. Wherefore — must be erroneous. That Mitchell's O. celatonica — the male plumage of which he has seen and described (I have only a female) is the [illegible] remarkably [illegible] of both 282 & 283 — I have made a good species, and they are widely distinct. — H. campylopus may contain as many species as I have specimens! Fremont's, Douglas' & Coulter's !! — — — — Up-town specimen, I expect, for a male, because so slender.

Mr. Cassin in speaking of Mexican birds refers to a plant near the [illegible] of Mexico? —

Bartlett's paper has never come to hand.

Dear Fendler! I was [illegible] California for the present, and would prefer to be [illegible] [illegible] — but [illegible] with in [illegible] to Chihuahua [illegible] — there [illegible] [illegible] to be gathered in Utah, certainly not one [illegible] to pay the expenses, loss, time & hardship — [illegible] look in the distance [illegible] may stay [illegible] [illegible] where he will reach there) until the August 1850 [illegible] [illegible] the California or [illegible] the begin. (Have you Kennott's last fine map, with Utah Lake Humboldt Mountain [illegible] I got it from Santa [illegible] yesterday.) Have you got Lincoln's report!) [illegible] where he thinks likely to [illegible] find a new field. —

But Fendler must have government protection and if possible Government assistance as far as regards free transportation for self & baggage & collections — also his boarding along as he is with the troops — he had 2 years ago transportation free but had to find his provisions.

I consider it double valuable for him to go with the rifles, as the regiment will spread through Texas & California. and get most acquaintance with the [illegible] may in future become very valuable to him. [illegible] I believe honest. Marcy intimately [illegible] [illegible] immediately. I [illegible] write to Fremont, but [illegible] the science & trail [illegible] the Secretary [illegible] at Cassin's point. [illegible] what you can [illegible] [illegible]

Wright there may go to Texas or Arizona but not to Santa Fe itself — by the September steamer [illegible] fact. [illegible] we have not. It ought to be [illegible] [illegible] possible if there [illegible] has collected in [illegible] [illegible] and many of the rarest of Fendler are in many few specimens. —

The time in Europe will prevent many [illegible] [illegible] which would have done so in quiet times.

If Wright goes there I can furnish him with a list of those plants of Fendler, which he has collected in so many specimens. I will also furnish him with a blank paper on Cactus which I had written for Fremont when he was here last fall, copy of which I have sent to Gray, [illegible] [illegible]

Lidecker is here but I have missed him. Think he will stay there, not go travelling. —

Lidecker is said to have been executed. [illegible] [illegible] the rising of Royalism in Germany!!

[illegible] bugs, birds, arrowroot, collecting — [illegible] witness the unusually at this season. [illegible] [illegible] and other eruptive diseases, inflammatory diseases more than I ever have known here, and even the Cholera. — Take good care of your self, if it comes to Boston, as no doubt it will. We shall have it in all its virulence by May, if it is [illegible] correct news. — I shall arrange Lindheimer, Hooker and the other borrowed collections before that time so that nothing of that kind may weigh on my mind. —

Does Dr Halsted go with the Boundary Expedition? You are mistaken as to its direction. They are to convene at San Diego on the Pacific in May and go for three east ward. — A collector should go alone, by all means! — Halsted would collect only few specimens.

[illegible]

I have picked [illegible] for you [illegible]

27 specimens [illegible] 81 spec. [illegible]

[illegible] 270 [illegible] 48, [illegible] —

Dr. Asa Gray

Cambridge

Mass

[illegible]

[illegible] a vast

[illegible] I have numbers

alluvial all [illegible]

waters of the Canadian [illegible]

the Raton Mountains [illegible]

a happy new year [illegible] your health [illegible]

[illegible]

[illegible] Dear Sir

[illegible] for you [illegible] Cactaceae arrange [illegible]

[illegible] Malacoctia [illegible]

[illegible] because I expect you will see it in [illegible] that Cactaceae form [illegible] I [illegible] parallel [illegible] with their edges towards the umbilicus [illegible] that all these [illegible] form the [illegible] Echinocactii [illegible] curved with the accumbent [illegible] contrary [illegible] side of the seed or [illegible] their faces [illegible] their incumbent [illegible] years [illegible] are clearly distinguished

[illegible] ... the first ones.

[illegible] ... Wislizenus ... [illegible] ... Mexico ... [illegible]

[illegible] ... of Cacti ... [illegible] ... not make much of them; some of them seem to me ... [illegible] ... report.

Only think of it, a few weeks ago I accidentally learn that two boxes sent by Fendler in April, one with live Cacti arrived here in June last; they are most probably in a warehouse in this city, but the boat that brought them is lost, the Captain not here, owners do

agents not to be found and so the boxes are lost to me! The Cacti certainly dead long since!

Now the main point. Fendler lives here on money advanced by me from time to time, & on nothing else, having spent all in the expedition to which he, together with the money advanced by ... & others. He is very anxious to distribute his plants as soon as possible, and I have to ask you to assist him as much as you can namely by arranging his collection so that they can be numbered systematically. I have done that as far as Compositae but I would not undertake that family and further on without more study than I now can bestow on it. I must therefore beg you to do it and to make your own ... I will include in the box of plants which I shall send in a few days a complete list with the present numbers to which I beg you to add the numbers as they ought to be, and return it by mail. About these things however I shall write more fully with the plants.

The second point is: Fendler is willing to return to Santa Fe and perhaps further south (he says that in the climate of N Mexico nearly 6 months of every year are lost for botanical collections on account of the dryness and long winter) if some generous friend of botany can be induced to advance him a sufficient sum, which he could partly repay by the returns for his present collections, and fully and finally by the collections

[illegible] to be [illegible] to [illegible] to [illegible] to lose them or have other mishaps. — He and closed [illegible] with the last lot [illegible] [illegible] with the most signal courtesy, [illegible] I think he would have [illegible] 500 sets of [illegible] however at least 200 perhaps. I shall write to [illegible] in the course of this year [illegible] of his present collection. What does the Society say? —

I will perhaps adopt another plan in future [illegible] of this sort. I so arrange the collections and distribute the set specimens [illegible] labor and pay a great part mechanical labor, then I can [illegible] on it. — How would it do to let the collector [illegible] using the entire season [illegible] distribute his sets. — It would be possible that any duplicate would be distributed in this way. If it [illegible] case, we ought to be at liberty to [illegible] something for the price.

I [illegible] a few families of [illegible] plants, [illegible] Epilobiaceae, Euphorbiaceae [illegible] perhaps one or the other besides but that is all which I should be able to do. I can therefore not claim that [illegible] be mentioned with [illegible] as I am going to do the principal scientific work on them. Engler is right when he says in his letter to you that I will not have time to give even a hasty examination of these collections. —

I now go over to your several letters not answered. I proposed Pendleton to give the first and fullest set (513 without the mosses) to Hooker, the 2d to Lowell and then Greene, Sullivant and so forth. — I believe that 35 sets will be engaged right away. — The sets fall off rapidly, 6 contain 400, 14 300 sp. 20 250 sp. 28 200 sp. 37 150 sp. 53 100 sp. etc.

and is 50 p. Fendler has very indiscriminately collected a great many specimens of some plants. But among those he has collected numerously are very few common plants. You will find that almost all the plants he are very rare. His common plants have been collected on the road and only in one or two specimens, not for distribution.

I have numbered all your specimens with Fendler's present numbers in pencil, so that you can alter them with ink to the permanent numbers.

Many of Fendler's plants were only in one or two specimens. They are left out of your proper set, but sent many over with their labels for your examination. The cards are each marked E and I request you to return these specimens when you are done with them, and you may divide them, and retain part, if it is possible. If few common plants only contained in Fendler's own set are not sent out I have named them in Fendler's list, so that they can be introduced in their proper place.

I propose to follow Hooker's plan in the Flora Boreali-Americana namely to mention in the printed Catalogue every plant collected whether there are specimens enough for distribution or not. Even the commoner plants are interesting in a geographical point of view and the rare or new one, could not be passed by, even if they could not be distributed.

In that account I have sent you specimens of almost every number, and the name at least, were the specimen was not sent. You will find Fendler

account of the habitat of pretty fair. —

I forgot to say that Reverdin only brought here and he carried along himself. He very imprudently left a box with seeds and another one with Cactaceae which I have to be sent after him. That has not arrived. All what I have of seeds I have picked out of some more or less, and a few seeds of Cactaceae he appears to have brought with him. All these will be sent to you together with seeds from Texas and Mr. Wislizenus in due time. I have not yet arranged them. —

I have done absolutely nothing for Lindheimer's plants; lately I got a small box with some interesting specimens and several other boxes are now on their way. The state of affairs was not as sick as that of Ab, and I think will be easily substituted with it. I shall make a preliminary arrangement as soon as I get it, and send specimens.

I have done nothing in Cicuta and shall devote some weeks to a hasty study of the specimens and then return to Baker's collection. I am ashamed to think of it.

I have lost some weeks by moving to another house, but I have now a little more room and a great deal more convenience, so that I shall gain a good deal of time in that manner.

I ought to have found out Arenopsis myself; I studied the family in Lindley. But expected to look in the appendix where this genus is described.

I see that Benton has succeeded in getting the Report of Wislizenus printed by the Senate. I feel anxious to see a part of it, but especially the sections quite interesting as they show the elevations of that country very plain. I am anxious to hear your opinion of my "hasty" appendix to it.

I now I have written more perhaps than you care to read. Here is the box and inside, when I get the collection of Texas.

Very truly
yours,
Engelmann

Prof Asa Gray

10/20

Cambridge

Mass

[illegible]

My dear Sir

[illegible] you [illegible] of your [illegible] [illegible] Wislizenus['] report [illegible]

[illegible] a box for you containing

1 [illegible] plants

2. [illegible] [illegible] which please return [illegible] [illegible] in the [illegible] (as [illegible])

3. [illegible] the plants you have already got in [illegible]

4. [illegible] Catalogue with locality time of flowering and a few remarks. The pencil or black ink numbers correspond with the numbers of the plants. The red ink numbers are those finally adopted for the plants as published; but [illegible] [illegible] [illegible] and left you the balance [illegible] especially Compositae [illegible] [illegible].

5. [illegible] packages of seeds marked [illegible] the catalogue for Mr Lowell and yourself,

A package for Hooker, which you please to forward

A large package for Prof A Braun [illegible] [illegible] the Cactus – Prince Salm Dyck [illegible]

[illegible]

[illegible] may be interesting [illegible]

Lindheimer's [illegible]

[illegible] correspondent [illegible] ordered [illegible] be [illegible]

[illegible] Miss [illegible] think [illegible]

[illegible] Cactaceae. Fruit and seeds will perhaps be found to give the best characters for distribution of species and subgenera in that family.

Fendler is so situated that he can not wait with the distribution of his plants; he will therefore distribute them now with my red numbers (in your Catalogue) as far as they go and then with his own numbers in pencil, so that the subscribers can order them afterwards so as to correspond with the printed catalogue numbers.

~~From Compositae~~ As far down as Vernonia you would then adopt in the printed Catalogue the red numbers — but further on you arrange the plants as you think best, and add to the end of each notice in brackets: (Fendler's Catalogue No 714) [or such it may be] or (F. C. 714) something like Hooker's Catalogue of Geyer's plants.

The few plants which you have no specimens of yourself in ~~the~~ your sets or in [illegible] and [illegible] send along, are mostly [illegible] well known and you may rely on the names written by me in Fendler's Catalogue. [illegible] are mostly from the frontier of Missouri. [illegible] others Cucurbitae, Cactaceae etc. [illegible] my account as soon as I have examined them. Fendler will send off his plants [illegible] as soon as distributed.

Very truly [illegible]

G. Engelmann

Send me your ~~manual~~ [illegible] as soon as published [illegible] with the account as also with subscription [illegible]

10

Prof. Asa Gray

Cambridge Mass

[illegible]

[illegible] Sir

[illegible] expect I should proceed with [illegible]
[illegible] I have to trouble you [illegible] expect
so happiness [illegible] wedded life. If however the pug
that [illegible] had acted as before supposing he would
I would have warned [illegible] worse than [illegible] poking [illegible] life are
as you are! we all not find [illegible] to [illegible]
[illegible] of domestic life. What do you say to that.
[illegible] letter of [illegible] day [illegible]
[illegible] if you have [illegible] not [illegible] of
[illegible] expect [illegible] go [illegible] not [illegible] [illegible]
under though [illegible].

That [illegible] become [illegible] disrespect [illegible] [illegible]
[illegible] [illegible] delay [illegible]. What [illegible] is [illegible] [illegible]
[illegible] on Gambel's plants, collected in Mexico and California
[illegible] some [illegible] between [illegible] and [illegible] [illegible]
have said about the [illegible] of Mexico. But much more
[illegible] will exist in the investigation and [illegible] of
Tendlers plants, or can you [illegible] what he is doing?

A few weeks ago I wrote you that I had [illegible]
[illegible] of Tendlers plants for you together with seeds.
The box was not off yet, when I got Tendlers plants
[illegible] I intended it. It would derange his [illegible]
[illegible] yesterday set out distribute the seeds.
[illegible] [illegible] some [illegible], and to day I have sent

[illegible] a box to you, containing seeds and also [illegible] for you and Hooker. The little [illegible] will deliver you the seeds to-morrow as soon as possible. [illegible] seeds marked L, are for Mr Lowell and you [illegible] as is also a small box with Cactii. The value of the seeds and Cacti you and Mr Lowell must credit to Lindheimer. — You will find [illegible] new species amongst them: 1, Spiritia macrostigma n. sp. 2 Cereus (Echinocereus) Roemeri n. sp. 3, Opuntia Tuna? The last species is interesting on account of the fruit bearing a point again as we have often seen it in O. fulgescens. —

[illegible] with plants includes also a package for Mr Thurber of seeds from Abrolhos Island from Dr Mead, which please to deliver as also the plants contained in the third box also from Dr Mead, directed to you. It has been in my hands about a year with the instruction to send it to you when I had other things to send. On both you will of course charge the expenses to the receivers.

The seeds for Germany I have taken out of the box and shall send them direct. —

You know that the Cactaceae in cultivation do not really produce fruit (Opuntia excepted) unless the pollen is artificially brought in contact with the stigmas, which I have frequently and successfully done in the Texan species.

I will in Fendler's as well as Lindheimer's plants carefully examine the Cacti, Compositae, Asclepiadaceae and Euphorbiaceae, [illegible] as which I have accomplished.

[illegible] that a paper [illegible] plants offered for sale is forthcoming, [illegible] by Prof Seubert at Carlsruhe. There is occasion for a collision again. — I learn that of Compositae the will contain amongst others the following:

Kuhnia eupatorioides [illegible]

Eupatorium collinum [illegible] (specific?) texanum

[illegible] aquarossus [illegible] (that name must be!)

[illegible] Vincentii nov. sp.!

Solidago (Litania) Vincentii n. sp. The others are known.

I send the boxes overland, that is to say to Cincinnati, Toledo, Buffalo, Boston; We will see what time it takes and what the expenses are.

Fendler's sets are ready to be sent in one or two weeks. — Do you distribute the sets? Otherwise I send boxes to St Louis and could I not put things from you easily and cheaply in that way? — I have not determined yet whether to send Fendler's [illegible] by sea or land.

I hope to write soon more. But before I send you the distribution of Lindheimer's Plants I must carefully examine all the sets of Compositae. I have to return the sets to Hooker and the others. I have had them quite too long.

Very truly yours,

[illegible]

You will be pleased with some of Lindheimer's Grasses

over

[illegible]

[illegible] make [illegible] to ask you to do what you can to get to Dr Josiah Gregg, the well known author of "Commerce of the Prairies" and who has lately turned his attention to natural history and especially botany, the same particulars from the war Department respecting his [illegible] to Texas and tendered to accompany any work you may be greatly aware of the magnitude of his [illegible]. He is at present at Fallville. He asks for free transportation of his

Dr Asa Gray
Cambridge
Mass

baggage and collections with army trains. — [illegible] what you can.

Secondly Opuntia fragilis is compared in European works with O. missouriensis and a var of O. mis. I frequently take this for the true fragilis. But there may be mistakes all round. I have a plant now, seeds of which I send you; fruit small dry spiny; joints oval, compressed very spiny. — What may fragilis be? What does Nuttall mean by "flower small" — [illegible] 6-[illegible] diameter!

Yours

Rome, April

17th

My dear [illegible]

F. H. Westhoff

Asa Gray

Cambridge

Mass

[illegible]

St. Louis April 1st 18[illegible]

My dear Sir

About two weeks ago I wrote to you telling you that I had sent two boxes to Mr Lowell's direction, one for the [illegible] (one with [illegible]) ~~correspondent~~ [illegible] [illegible], [illegible] the (smaller one [illegible]) [illegible] [illegible] & which I [illegible] requested the [illegible] to forward to [illegible]. [illegible] [illegible] [illegible] with the first [illegible] to Kew a few days ago [illegible] expecting to hear something unpleasant [illegible] [illegible] [illegible] [illegible] politely [illegible] [illegible] more [illegible] a hint! [illegible] [illegible] everything of them [illegible] [illegible] [illegible] [illegible] take any thing else [illegible] [illegible] [illegible] will [illegible]

I write principally to tell you that [illegible] has concluded not to go. He is going to the western borders of Missouri, where he will find a small business, if he succeeds well; if not he will probably go next spring west [illegible].

I shall therefore not draw on Lowell [illegible].

Please send the amount for [illegible] [illegible] which you may receive to me.

How do we account with Mr Lowell? He advanced two years ago $150 if I am right. The set which Fendler selected for him is the best and most complete after ours, perhaps better; at all events the choicest set of all; [illegible] [illegible] [illegible] the [illegible], with numerous specimens of many species etc — as you will find yourself by examining it. — I think

[illegible] F. [illegible] then the [illegible] price [illegible] $10. [illegible] Do you say? [illegible] in [illegible] of his [illegible] [illegible] plants. — [illegible] [illegible] of Gardeners [illegible] alone — they would [illegible] but [illegible] in your [illegible] time. —

[illegible] it entirely to the L's liberality to value all that, and say whether he will have the balance of his money refunded by F. (though money in your hands) or whether he will take some of the unsold sets for it which are still here. They contain fewer specimens of course — but many of the rarest species.

The Europeans especially the Germans seems take up some of my time and patience [illegible] meeting [illegible] he will soon hail the united republican states of America. I hope! I am delighted to see Endlicher's name mentioned in connexion with the liberal movements in Vienna.

But science will offer a little [illegible] [illegible]. We however can not concede that [illegible] government not so much [illegible] [illegible] — in fact not only the U. States but the old French republic proved it.

Untill however every thing becomes settled again, perhaps tens of years [illegible] and till then our scientific commerce with Europe, especially with Prussia and Germany will no doubt suffer some.

[illegible] and Gardeners Chronicles they will go with some other opportunity.

Notice for Mr Buckman —

Evonimus glaucus has been sent in specimens by Lindheimer and also by Gregg. I see from his account of northern Texas that he was not acquainted after his arrival an inhabitant of the N.S. [illegible] him Texan specimens. —

Would you or Mr Lowell like to get seeds bulbs etc from the neighborhood of [illegible] above Fort Leavenworth, where Gardeners [illegible] going — if so, I will make him collect. He will also collect some sets of plants and be careful to have them in the best possible state of preservation.

[illegible] Truly [illegible]

A happy time to you [illegible] in May a year after!

Over

[illegible] the person with him is sent he is [illegible] with the [illegible] and will have [illegible] to collect bills [illegible]

[illegible]

Mr. Lowell

Pay the Postage

Chas. W. Eliot

(Rec'd 25. May)

St. Louis May 14th 1848

My dear Doctor

About two weeks ago I sent you Kunze's ferns, translated; I expect you have done with it what you thought most proper — and ~~if you~~ in case you printed it, you have probably added some notes or got Mr. Tuckerman to do it. — I include here a few grains of seed of Mammillaria Nuttallii (M. simplex p.p. — Flora) nearly to M. similis but seed not half as large etc. I shall have it in bloom in 2 weeks together with M. similis when I can compare. — Also seeds of Mammillaria viviparia ?? from Santa Fe. They as well as the whole plant are similar to M. [illegible] (Engelm. am. interlexta — a preoccupied name) from Texas, but perhaps not different. — The true M. viviparia I shall be able to compare flowers shortly as a small sprig of viviparia sent by you in a letter 2 or 3 years ago will be in flower shortly.

Fendler has returned from St. Joseph's upper Missouri — not pleased, is gone to Chicago — will probably return before long and perhaps then go to Santa Fe !! What do you mean by; the may get him a government office? Only some permanent appointment he may be induced to go again I think.

NB. send me a copy of Fendler's note in regard to Echinocereus Fendleri No. 273. as I have only the flower, know nothing of the plant that note will be important; I know that he has a few words in regard to the plant in your copy of Catalogue.

Will you give Lowell those supernumerary sets, sent to you in the large box with the others, or shall I give him the later sets, which I still have here? It may be well enough to keep the former, or a few of them for other subscribers — that may yet apply — Just as you think proper.

Could Findlay not get the money soon which he has to get for the sets sent to earlier subscribers, or at least $200, on the advanced by Mr Lowell — He is sadly in want of money and I can not help him out.

If he should still conclude to go to Santa Fe — I shall immediately draw on you for $200 (Lowell & Nuttall) for his outfit etc independent of the money he has to receive for his sets.

Very truly

Yours

J. Engelmann.

My respects to Agassiz, got his letter a week ago. Mr Tappan left here with a government expedition. I should be glad to see A. here! You too — won't you take a trip east?

You must have got Lesq. Report by this time. W. has sent copies to all my Cor. Corresp. besides so that you need not send any (Buckley, Baker, Cleveland, Carey, Green, Parkman etc etc) to them. — Some typogr. errors and of minor importance. Flower of Greggii has 15–18 lines not inches in diameter — flowers of Mentzelia sanguinea are paniculate, corymbulate the first word is left out etc. There are less errors than I was afraid of.

Prof A. Gray

Cambridge

Mass

[illegible] June 1st 1855

My Dear Doctor

I was very sorry to learn that my boxes with seeds, cacti & dried plants had not yet [illegible] the 1st of last month. — They were all sent off for me in March by Cincinnati, the Erie and Buffalo. I have asked my commission merchant to write to Cincinnati. [illegible] time determined [illegible] price asked, and the assurance that even they would be in Boston before 6 weeks, [illegible] If you have not got them yet I am afraid your cacti and seeds will be of little worth. [illegible] plants [illegible] sp. F. & L. plants not.

Your letter of May 16th reached me last week. [illegible] me from me [illegible] Have you not got it? Many thanks for the [illegible] I have been much pleased with the work, and only admire [illegible] in getting out [illegible] and often after it is [illegible] But don't let it [illegible] sleep entirely! — The expenses were only 31 cents for that heavy volume, and I come to the conclusion that the mail and the express lines are for me the best method and in the end the cheapest for our purposes. — Your Manual was sent to N.O. 2 or 3 months ago. And I have not got it yet!

I shall wait a little with impatience and if I don't learn of the arrival of the boxes I shall send you by express my set of Fendler's mosses of course those single specimens which I had already sent you along with your set; together with that I will send you Thurber's Cryptogams (composite), among which you will find [illegible] things, and if you desire also Gregg's, though they may be the same as those sent to Short, Torrey & Engelmann you — Let me know soon. Along with them I will send all Fendler's remaining sets for Lowell

[illegible] the [illegible] to [illegible] the [illegible] to [illegible] & give Lowell the Cater's smaller set. [illegible] it, as I wrote you before. So as you case in that [illegible]

Do you know anything of De Candolle's publication, [illegible] resort? He wrote me last year that he [illegible] engaged on them, especially [illegible] — [illegible] also that he has described some species — you must [illegible] the Plantae Fendlerianae [illegible] in your name. Please [illegible] a few [illegible] — [illegible] them in your name for [illegible] not easier to associate my name with [illegible] when I am doing hardly any thing with them.

My Echinocereus caespitosus is growing luxuriously and [illegible] in flower. I have the same plant (from southern Missouri) with it in cultivation [illegible] to compare them with; so far [illegible] in all parts. Leaves often more than 3 inches long, glochids acuminate etc. — You say in "Genera" that there is a second species in Arkansas; what is that? perhaps the same as "caespitosus"?

You have got [illegible] idea of — what is you say to my part of it — [illegible] the pines? [illegible] actually [illegible]?

Mr. Carl's one flowering one of my new species from Chihuahua (Echinocereus reichenbachii) has been in flower [illegible] also Mam. Nuttallii (near my similis but with [illegible] — I have sent you seeds a few weeks ago) and Mam. virginana. M. radiosa (formerly intertexta mihi) is certainly different from it — but I do not know yet, whether the plant sent this spring to you is not virginana itself! from Texas. I shall examine further. —

I was glad to find so many of our Mexicans, Texans in your genera; I see you have named that Acantho[illegible] Streptanthus as a new species. Why that Fendler one not included in the limits of your [illegible] or you may find many good things among them.

I shall write to Braun [illegible] person and urge him to make the [illegible] Germany and procure subscribers. [illegible] in Europe are beginning to be unfavorable to science — and Germany, especially I am afraid is destined to [illegible] great internal and external wars yet. [illegible] things [illegible] could not be worse [illegible] had sent [illegible] their 34 princes abroad [illegible] they will have to do it yet, only it will not [illegible] blood and misery. [illegible] Lichen [illegible] is in Frankfurt [illegible] one of the Delegates of Cambridge.

[illegible]

[illegible] you know immediately [illegible] the [illegible] of my Cactaceae [illegible] written to Cambridge about them. I have written to you weeks ago [illegible] some Cactus seeds in [illegible]

(stipulated price [illegible] it will be a valuable acquisition [illegible] it appears that the specimens are unusually fine & numerous!)

Prof A. Gray

Cambridge

Mass

[illegible]

My dear [illegible]

your letter of [illegible] [illegible]

[illegible] [illegible]

[illegible]

[illegible]

J. H. [illegible] [illegible]

[illegible]

They [illegible] shipped [illegible] [illegible]

[illegible] of the [illegible]

though [illegible]

[illegible]

[illegible]

[illegible] application [illegible]

[illegible] you may [illegible]

[illegible] your [illegible] perhaps [illegible]

[illegible]

for a few days ago [illegible]

[illegible]

[illegible]

[illegible] Several

large [illegible] [illegible]

[illegible]

[illegible]

from the [illegible]

[illegible]

JUN
19

1) No 608 Fendler is in full flower with me. It is a Salvia apparently belonging to Microsphace, Benth., but Corolla rather too large for it. It is annual! Are there any other annual Salvias? — Connectivum linearis postice deflexa longitudinaliter connata superior : filamentum very small, rudimentary tooth inferior lobe 3 fm style truncate, rounded, glandular

(is there any signalia surface on the upper lobe!) the lower lobe lays right between the anthers, and the stigma adheres to it. Upper lobe of corolla emarginate lower 3 lobed, middle lobe bifidus. — No bee appears to be here to aid, I have not examined the stigma. I believe I have seen this last also in Bremen's collection. — The calyx of bee is immediately after flowering laterally compressed & closed, but opens again when it is ripe and drops out. I am collecting seeds.

Lindheimer's Blue Adenoeni is in flower. — Flower bent irregular flower very elegant, 3 upper lobes smaller, two lower ones larger

lowest stamen — the largest blue anther, bottom with yellow anther, anthers unconnected. Why does Endlicher reunite the dicera? The dehiscent capsule should be sufficient to separate it. — I have just compared Fendler's plant 673 and find it entirely distinct. Leaves less compound, flowers much smaller — Lindheimer's plant has very much compound leaves and small leaflets. — But I can not find any specimen of Lindheimer's, probably he has only sent the seeds. I find on a notice on the paper, which contained the seeds: Blue Adenoeni from granitic soil on the Llano. — I can have 3 ripe with dry spinous capsules (calyx over the dry capsules) growing regularly with 5 leaves.

I have examined Fendler's Pines, and find that my name O. Brachyptera is wrong and must be altered; cones which I saw in Fendler which were in a bad state then, have examined, shows the seeds to have large wings. — But I believe I have told you that before. — Have I not requested you also to send me specimens of all the western Pines and their cones? I should like much to get them. — Dr Clemens has got the other day one of his Boxes containing Dec. Cacti and a few cones of Pines and oaks. The Pinnae were especially interesting, for instance the specimens of "Echinocereus fendleri", which last is a

before — as the other, I have always attained a [illegible]
[illegible] seed under [illegible] on other plants
[illegible] a few letters from Dr. Gray. he is to not
[illegible] the genus Chamaecyparis, viz. make it the first
genus of Cupressineae, viz. the sections of Pines, [illegible]
[illegible] 828 [illegible] 829 is also [illegible] cones with excsetted
[illegible] 833 is perhaps [illegible] — no cones seen, [illegible]
831 Pedalis, have it young tree growing [illegible]
[illegible] (formerly) 832 Pinus flexilis — [illegible]
[illegible] between Coll Juniperi — do you [illegible] ?

Salinum cargoense is beautifully — [illegible] leaves 2 – 3 inches
long, flowers 15 lines in diameter — [illegible] really also
[illegible] pale yellow stripes. — the name Sarmiae would be better, among the
other minor difference from the common plant which I have also
in cultivation — it should be mentioned that the style is
much exserted [illegible] the numerous stamens and [illegible]
[illegible]

[illegible] 10 – 12 in your genera [illegible]
[illegible] the [illegible]
[illegible]
[illegible]
[illegible]
[illegible] integuments are thinner membranaceous and the
[illegible] one side opposite the hilum

In one of the pots, where I cultivate a Cactus from Cosiquiriachi
a little plant with the appearance of an Amaranth came up —
I find it to be a very pretty species of Dyssmania, not described
in Dec Prodr — with linear leaves.

The Oplotheca (262) for which very I have in cultivation
it must be different from the larger, much more to mentose O. floribunda
but Fendler's specimen appears to be intermediate. I can
so far find no striking characters to distinguish them.
But what I have found most remarkable, is that there
can not be the least doubt, that the lobes of the
corolla (staminal tube) alternate with the anthers !!
and the calyx lobes. Now is it a Corolla or a
tube formed by the filaments? — Is any thing of the kind
found in other Amaranthaceae? — I thought years

ago I had observed the same thing in the other genus, it is positive
that as the specimen was dry & the corolla [illegible] a [illegible]
[illegible] I think.

Lastly, [illegible] and carefully the fine and minute [illegible] of these
plants when there were any duplicates [illegible] your
own [illegible] it most of those plants where there is any doubt.
Streptanthera N° 38 & 39 (Fendler) N° 23 according to my arrangement,
N° 39 was one year in gravel, without leaves, stem smooth above
[illegible] round minute. I broke off a branch for you. N° 38 is
undoubtedly the same plant, but with flowers & leaves; it must
be combined in your and Lowell's sets. Case of mine are
lower leaves hispid with simple or spatulate hairs — leaves
linear, [illegible] a little wider — stem [illegible] hairs, [illegible]
different, as I think. — I include a flower of it in this letter.

Delphinium 13 Fendler, 11 in my arrangement is probably nothing
but D. azureum, more pubescent, spike [illegible], [illegible]
pale, greenish blue; You must have a specimen and
also Mr Lowell, he under N° 11 and you under 13
& azureum 10. Rare the Fendler was only collected in
one specimen and not distributed — it is the common
form with bright blue flowers etc — Fendler retained
the only specimen collected.

The red ink numbers have been used by Fendler
in the distribution of his, only as far as they go
viz. T. Vernonica 295 and so far you need not
refer to Fendler's original numbers. — but from there
Fendler's red numbers have been used on the labels
and you will have to indicate them in [illegible]
with those of your arrangement.

Your Cardamine cordifolia is a beautiful species.

I am packing Wislizenus & Gregg Compositae for
you — You keep such duplicates as you wish
where there are any — the others please return when
convenient. — Wislizenus labels are not very
[illegible] and pretty — German. I have translated it
what was necessary, especially color of flower — [illegible]

not, when that was easily recognized, as yellow in Compositae etc. —

I have just received a, [illegible] fine germany, among them 100 plants from Texas, from Rusk County (upper waters of the Sabine, north of Nacogdoches) which will be interesting to you partly on account of Geographical distribution, partly and partly to see what they do with our species there sometimes. — I send them along for you to look at them — perhaps put it [illegible] on them. Is Schultz's new [illegible] not a Lithospermum? — I believe the plants have been named by Prof. Scheele of Carlsruhe — I have also received his Monograph of Cactaceae with plates; his does not [illegible] agree with yours & American in Gen. numeric. —

I send you a copy of Heidelberg garden Catalogue I have duplicate on account of description of one of Stachyurus, near Salvias; the name which I had named S. pycnostachya; Bischoff publishes it under the name of S trichostyla. — In the same Catalogue he publishes a Vernonia [illegible] seeds from here — one of the hundred varieties of our Vernonia — I really don't know whether prealta [illegible] altissima [illegible] are not all the same; and I have [illegible] my doubts about V. arkansana

I send along the specimens received from Dr Gray as also a Hieracium which he pretends I have sent him the seeds from Illinois — but I don't recollect ever to have met with a Hieracium in the U. States. I may possibly have found the seed [illegible] Hieracium [illegible] H. grows and where I may [illegible] Look at the specimen and see whether you know any thing about it. — You will oblige me by returning all these whenever convenient. —

I send also along a few drawings and notes on Fishes, to be added to my former collection which was taken by Mover's hands — I have never

Nov 1834

[illegible] except that he said [illegible] — I have not done any thing about fishes since [illegible]

My Dear Sir — Salem Oct. 2nd 1848

I have had time to take pencil to preparing paper just as material offered. Your letters of June 13 & July 17th both reached me [illegible] Fendler's plants have [illegible] copy. I hope these for England have arrived long before this time. — I always thought J. Carey was a subscriber, but I can not find any authority, nor as to Oakes — I probably put them on the list because they were subscribers to Lindheimer's plant. — I can not get that copy of your manual from N Orleans. I shall write again there, by a friend who goes down in a few days.

Lindheimer was detained as unexpectedly till end of June & was then preparing to go to the San Saba or Llano where — the Indians permitting — he will settle and remain at least next season, and then advance with the Pioneers of civilization. He began to work at Cusonia but think it best to lay that aside again and distribute now the Lindheimer plants, before I do any thing else — they have been accumulating too long.

At the same time I will study a few of the families of Fendler & Lindheimer plants.

Cactei, Cusonia, Pinei, Amelopsidaceae, Alsinaceae — which you of course will have to revise. — Tell me, if you conveniently can, whether I have sent you already my full description to be printed with the account of Lindheimer's plants. It is so long since, and I have kept no memorandum, that I could recollect

I have sent you some analyses of flowers of Wislizenia from Texas but whether a full description, I don't know so far as description of some of my new species from here? 2 Echinodorus — 2 Cyperi etc. — Cuscutae — I am sorry to say that the [illegible] have lost these things. I will write them again, as I have the manuscript still here — and some of the descriptions are so imperfect especially some that I do not like to send to have to cut another. — On second consideration I think it better to write over all things over again.

I have also that Malva (near rotundifolia) of Pendleton in cultivation — it must be Malva borealis pico and I can not compare specimens — we have here only M. rotundifolia with large flowers — this is from Santa Fe — [illegible] — in my cultivated plant the calyx is not so large as in the wild one — it is a poor specimen. — How should M. borealis come there?

Fendler's (the third) Bolivaria is in flower with me specimens that have got the seminal leaves on them! — both Texan species I have also in cultivation but they have no flowers yet — Gindheimers large one must be named Longiflora being so different in that respect from the others.

Can you distinguish two species among Fendler's numerous specimens of Malva sylvestris? It appeared to me as if there was a difference in the fruit and also in the stigmata —

I close the letter today 27th in a hurry though I have several things to add — shall probably write soon again. — So Mrs has united our Diplomaria with Streptanthus! — He may be right!

Very truly yours
Sereno Watson

Tritium calycinum is in fine flower since 4 or 6 weeks & bears seeds abundantly; I enclose some — it is distinguishable by having all parts, Calyx and the style long exserted and serrated; it is quite ornamental. — Death-Tritium of New Mex. with pure capsule has come up from seed — I hope to see it in flower next season for I must have a specimen of it. The 10 stamens, 7 ovaries — the shape of the capsule appears to prove it distinct from either; the seed is hardly distinguishable from that of T. tenuifolium.

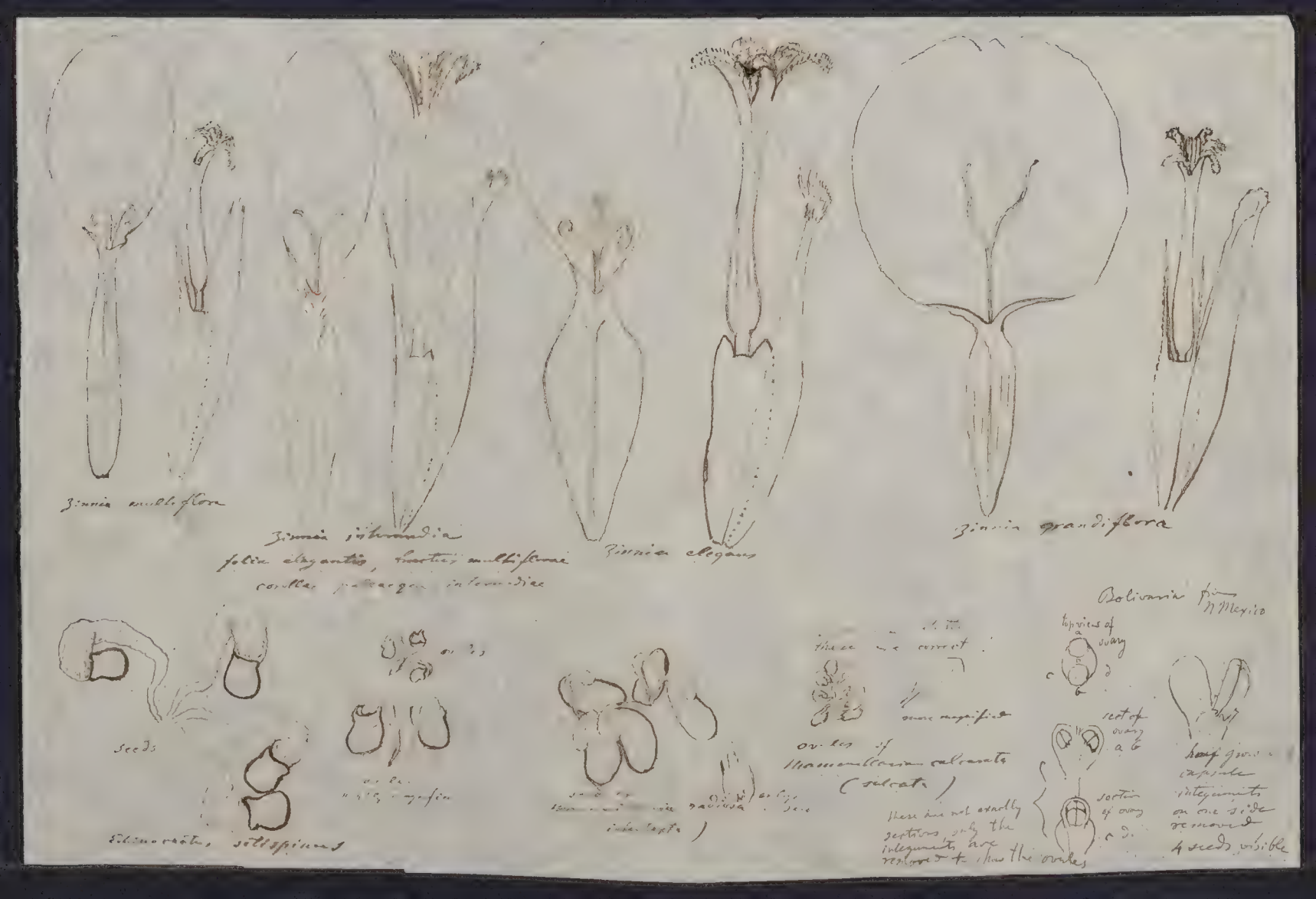
Mr Torrey [illegible] of L. Caire — [illegible]

[illegible]

month

Prof Asa Gray

Cambridge Mass


Zinnia multiflora
Zinnia intermedia
folia elegantia, floribus multiformis
corollae petalorum intermediae
Zinnia elegans
Zinnia grandiflora
Bolivania from N Mexico
top view of ovary
seed
ovules
ovules
these are correct
ovules of Mammillaria calcarata (silicata)
section of ovary
section of ovary
half grown capsule integuments on one side removed
4 seeds visible
Echinocactus sellispinus
radiosa
intermedia

Emory's report.

[illegible]

[illegible] pretty.

The pistils of Fallugia are not right, as you will see in comparing [illegible] specimens. [illegible] the [illegible] of the [illegible] first of [illegible] pedicels [illegible] two opposite [illegible] more oblique [illegible] circulation but [illegible] in the dried [illegible] of you will for you [illegible] in all [illegible] glandular [illegible] of [illegible] Polecia [illegible] slightly [illegible]

[illegible]

Fallugia [illegible] Ditto

Tourneforia [illegible] Egan [illegible] found [illegible] Comb. [illegible] think the diff. [illegible] character [illegible] The leaves [illegible] always obtuse, [illegible] also the sepals very obtuse! But the principal mistake not only of the drafts man but also of Torrey is that he makes the panicle a continuation of the stem. It is external from the upper [illegible] of the stem. — Where and when did Emory find it in flower or fruit — was he traversed that region twice in fall? — Does the figure not represent [illegible] opposition? The pinnae certainly resembles [illegible] and the [illegible] of free stamina [illegible] it as type of a peculiar family.

Spiranthes Cernua. I have growing from Texas seeds. Its germination appeared to me singular. The Calyx & Corolla similar to those of other Orchids, came separately out of the ground, their connection with the skin being rather great, and the combination of this also came out separately. So that I actually thought a fourth plant was growing beside the Spiranthes.

I wish Henry [illegible]

[illegible]

I have in Cultivation [illegible]

Tentacles Bolivianus is also in flower as an annual [illegible]

Cuphea [illegible]

Euphorbia [illegible]

Cacti [illegible] the fleshy outer tissues [illegible] "mucilaniea" is the dissolved [illegible] species it is not [illegible] Schinocereus cylindricus [illegible] Schinocactus [illegible] where the funiculi elevate (as they are usually) and thicker than the seed itself — and the [illegible] is quite similar only the [illegible] in proportion [illegible] of a single [illegible] distinguish [illegible] the mamillaria [illegible] — no [illegible] but [illegible] mamillaria calcarata [illegible] the [illegible] plain

[illegible] the [illegible] of the [illegible] seed [illegible] observed [illegible] the [illegible] in the [illegible]

I have just examined Tentacles Bolivianus which is [illegible] with me as an annual [illegible] nevertheless also [illegible] some interesting points [illegible] in a globose form, viz. [illegible] the first view [illegible] side view shows it very plainly [illegible] the top view [illegible] 4 ovules in each side of the ovary [illegible] ovary is flower only [illegible] ovary [illegible] in fruit [illegible] of form [illegible] the [illegible] is situated on [illegible] but in fruit the upper part is so largely developed that [illegible] seeds appear attached to the base. [illegible] but often not all developed, and they have then [illegible] shape only when all 4 are developed — and the [illegible] that the 2 true Bolivanus which have the same shape [illegible] must also have 4 ovules in each compartment. — The ovules & seeds are all attached at the point where the fruit [illegible] the 4 parts of Labiatae, there is no [illegible] at four, & authors speculate, including Bentham [illegible] which they are adpressed.

I dont know whether I pictured to you a [illegible] Lindheimer on Prairie hills on the Guadalupe [illegible] Origanum etc. I don't remember if I [illegible] P. origanoides, grey aspect etc etc but I had a few seed planted and [illegible] in the plant, [illegible] from them not in the least different [illegible] P. dissiliens! which [illegible] only in fertile river bottoms. By the by — I compared the other day the flowers of P. dissiliens & helianthemoides and find the very different, and the best character is that in P. dis. the corolla is almost twice as long as the calyx in P. helianthemoides it is as long or hardly a little longer. I doubt though whether P. helianthemoides is perennial.

Torrey noticed the difference between [illegible] Decandolle and that of Gregg. — I had observed the same, and find the principal difference in the persistent calyx (though Decandolle is correct in saying: siliqua in calyce persistente) and the much

larger style. —

I learn from Torrey that you are to work out the exploring expedition plants. Don't ruin your health by work, I entreat!

I just received from Dr Gray for Sibbilla fall ripe seeds of my Greggii — 10–15 in each calyx — with a long woolly arm style not decidedly therefore ♂! — What I had seen & sent before was much bruised and broken. — If every ripe calyx is monoecious, that Lamarck has a calyx intermediate then the reason of difference between Lamarck & Pursh then the idea of flowers not one yellow there! — Flowers of this genus then are such big looks much like fallacious!

I include some seeds for examination & propagation

Yours Truly

Dear Sister

Now again put some miles together and that it would be interesting. Just a line to tell you how little I know, or you would not so long your time so much on Texas that would prevent your time to attend to you.

I was disappointed in my journal, I have [illegible] the pain of the difficulty of [illegible] plants, & examine. The few families of this and [illegible] of which I told you. I have a letter from Prof Asa Gray who approves of my views & knows and adopts it for two sections of his genus. I am not in it possible to describe a station in flower & will in [illegible] [illegible] — but I can form more exact for [illegible] & [illegible] not [illegible] to distinguish both species generally. —

Next day I have sent a box of plants to T. & Gray per express. Tell me what it will cost to.

Lantana 1 Gregg composita
2 Wilizenus composita

You will see Dwelle also find that most all the plants of Consignment are very distinct and probably most of them new.

3 Pr Texas plant from near Marcy dorling. you will discover how they some are named.

4, a few plants sent to me by Dr Shaff, I offer it in exchange for a collection —

5 A catalogue — from the same (for you)

6 As per specimens & descriptions of Fishes, you did observe, which please hand over to Mr Smith, as others sent two years ago.

7, 6 sets of Mexican plants 43–48, together 742 specimens, which I want Lowell to take. His set No 1, including 512 specimens is so full and well selected, that it ought to be worth more than 451, in fact if he takes the other sets all I will try to settle the balance with him for Fendler. — If such an arrangement is not proper I will at once leave those sets in your hands

8, 6 (or 7?) packages of Lichens, collected by Mr Fendler which I would request you to hand over to Mr Tuckerman to arrange and do the best he can with for Fendler's interest. — Sillimanit has sent Fendler $40 for his Mosses, and I think rewarded him very liberally by that. — Any thing would do for the ~~mosses~~ lichens as I think they are of no great consequence. But you or Tuckerman will judge.

9, A number of woods from Texas for you wrapped up in newspapers, the specimens numbered, and a Catalogue accompanying them.

10. The same woods and ~~those~~ such as you have got before for Mr Lowell, who you told me expressed a wish to obtain them. — A catalogue also.

11. The same and Catalogue for Hooker, who it appears desires to get such things for Kew, just as collection. I shall write him about them.

12 a few pine woods specimens and cones from Fendler for you.

13. a few seed cards to fill up the spaces in your set. — They will be interesting to you, as you are probably unacquainted with the forms for example such as Opuntia elata & arborescens, etc — Is it not

singular that of those [illegible] not one has even
flowered in europe [illegible] The only one that I have in
cultivation, O. fulgens [illegible] I
from his [illegible] I have it.
Now do you [illegible] well.

I had written so far when [illegible] your letter
of Aug 2 [illegible] I will be [illegible]
[illegible] — [illegible] that [illegible]
[illegible] — [illegible] a package of plants
[illegible]
[illegible] — it is the consequence of a somewhat [illegible]
state of mind — occasioned by [illegible] exposure
[illegible] organs — [illegible]
cease to judge [illegible] only sympathise [illegible]
but the thought that some physical [illegible]
or [illegible] to-morrow [illegible]
we would consider [illegible] or foolish [illegible]

Who is there along the northern [illegible] with who —
could exchange — I want a few [illegible]
[illegible] plants which I have not yet got —
— now I begin to take an especial interest in Pines
and trees in general. [illegible] — I should also
like to get the cones. — I have at present the cones
of 8 pines of Mexico & Chihuahua, [illegible] P. variabilis;
[illegible] of Philadelphia and P. rudiensis N. York. [illegible]
[illegible] much now for exchange, but I have always in
lot of Texan plants to offer against your western
specimens. — As soon as I get your Flora or Manual
I intend to make out a list of Desiderata [illegible]
[illegible] — I [illegible]

Very truly yours G. Engelmann

Aug 14th

St. Louis, May 21st 1[illegible]

My Dear Dr. —

I just got your Manual today and have seen it hastily. I am much pleased with almost every thing and only wish you and Torrey could work on Flora and complete that! A noble destination!

I may have to mention some other points, but will today only state a few, which have struck me.

In Cactaceae you say: "Leaves, hairs" — now Opuntia have tufts minute leaves as you know without mentioning perishing. "Albumen none" present in many species of the different genera always present, though small, in Opuntia!

Opuntia — Stem composed of flat joints — only in one section, in "O. cylindracea" terete!

But I have more to say about Echinocereus! First I have been not a little pleased that you have adopted my restitution of Echinocereus, and my Sagitth. restitution. But — you ought not to say "species crowded without order" — "they are so in Sagitthania" and in fact as you have it every plant with a similar arrangement, e.g. Ammonoides in regular spiral rows. E. pectinatus from Sangamon river Illinois to Kansas & Texas? E. radians from St. Louis — I suspect is part of Kansas & Texas. But I can not agree with you that E. pectinatus is correct. If you have not other material than I have, I think that Nuttall's subplate of Sagittania possible are the same and are true Sagittania, widely different from my E. pectinatus. Now for the reasons:

Lizzie! I can not compare.

Nuttall says as well as Nuttall that his plant grows on the banks of the Delaware below Philadelphia abundantly. P. further says: a small plant with flowers in proportion large — that is the case in the Cultivated of N. Carolina (Pectinatus) specimen, [illegible], but not in mine from here. Nuttall describes his plant very plainly as monoecious, etc — also from N. Delaware. — My specimen from N. Carolina have flowers as large as most of the Sagittariae — usually

apparently simple — one flower female; the Philadelphia specimens are not well in flower, but they have apparently a somewhat smaller flower, two verticills of 3 flos each, scape one fl. female, the rip seed is either with more that petioles with or without a stamen in the fl. specimen — no 7 stamina.

Now my specimens from here have always 9 stamens, always fertile perfect flowers — much smaller — very small head of fruit — includes in the calyx — pedicells slender, reversed, petioles slender, lamina very distinct — rarely wanting.

I have found my plant after 4 years again 2 or 3 days in fine order — scapes frequently radicant. This plant is certainly very distinct — but what is the Mississippi plant you mention? — Is Sagittaria pusilla confined to the Seacoast?

S. variabilis is certainly distinct from S. sagittifolia — I now receive ripe seeds of this latter which are 4 times as large as the former and of a different shape — I include both herein.

Did you go too far in declaring all the northern plants as belonging to variabilis.

I know three northern ones except S. pusilla which is the fourth. — They can be well distinguished according to the petioles of the female flowers! not to speak of the seeds etc.

S. sagittifolia pedicells of female flowers 3-4 times shorter than those of male flowers, stout — Europe. filaments subulate smooth

S. variabilis ped. of f. fl. half as long as those of male flowers, slender — N. America. filaments subulate smooth.

S. simplex P. ped. of f. fl. as long as of m. flowers, all very slender; filaments short, conic, glandulous. I have this from Bethlehem Pa under the name of S. acutifolia; — it is also our S. stolonifera Mich. Whether it is actually Pursh's Plant, I can not say for certain, but suppose so.

S. heterophylla Pursh female fl. sessile (common here in all varieties) — I have a form from Canton in with thin, slender leaves, and another I have collected myself in the rapids of Niagara river, with very stout, rigid leaves. — Filaments as in simplex.

S. pusilla Philadelphia etc.

S. falcata with all its varieties is the only remaining good species known to me — but only from the south, from the largest forms in swamps near N Orleans to the smallest on Prairies of Texas.

Would not some one of your north districts examine all your Sagittarias in a living state and with ripe fruit? I should like to compare specimens or exchange. —

I have once for a floating specimen here of a Sagittaria, apparently not different from S. variabilis, growing with that species and S. heterophylla; but fruit very distinct — I have not been able to discover it since to examine it in flower etc. It may possibly be a new species. —

I have now ripe fruits of the E. European Sparganium and know for certain that our ramosum is a new and distinct species — whether yours is the same I don't know, having not compared eastern specimens. — Get somebody to collect it in fruit! I call it S. digynum. Besides that we have S. americanum. — Your plant in Mitchell's expedition, called by Torr. S. ramosum, is my S. digynum.

Perhaps the above name 5 species of Sagittaria comprise all of Pursh's species (except natans which I don't know)

Note — my S. variabilis: scape simple — but in the larger forms (S. latifolia obtusa; etc)

Iqiné & Stylem branching

I should like very much to compare good eastern specimens — and especially ripe seed.

Ethiodrus [illegible] — say six or more — flowers 6 — 21 and more. I have no doubt the [illegible] pen[illegible] waters, parnassifolia [illegible] must be drawn here. I have received some southern and eastern species of Gleum which also belong here. —

? Do you consider Nees wrong in uniting Digitaria sanguinalis with D. stricta?

You will have to add Orobanche (or Aphyllon) fasciculata to the northern plants. I have found it on the sandy beach of Manitou island (belonging to northern Michigan) growing on Artemisia canadensis (?) [illegible] — Cyp. uniflorum is rare here but I have several times tried to dig it out and ascertain on which plant it grows but without being able to do so. Where the other there can be no doubt. Fl. in July, August. I was just in fruit in the last days of September.

Asclepias syriaca Sullivantii has not been found by me in Missouri and is still opposite here, and is a good [illegible] further east and south in Illinois.

Amaranthus tamariscinus [illegible] I am glad that this [illegible] have not got a name [illegible] without [illegible] expressing it merely of his [illegible] [illegible] here, the common [illegible] of the [illegible] of the Mississippi.

I must enter protest against uniting [illegible] Hydrophyllum [illegible] with A. canadense — as distinct, and in great measure distinct from A. hydrophyllum & little hirsuta. Should you not know or not have in the north the true A. canadense or what I consider so with glandular acute involucres and smooth, shining nuts, great much more slender spike?

P. lapathifolia is very common weed here in cornfields etc., and very tall — always with narrow leaves, —

2, [illegible] in all its forms (here at least) 5 stamens opposite. — It is the same as R. Bri. R. plebejum for N. Holland.

R. ramosissimum has generally 3 stamens opposed to the inner lobes of perigon; but often a 6 parted perigon with the 6 opposite stamens or 3 opposed to the inner lobes — all plants in one neighborhood are the same in that respect — Erect tall or pubescent or [illegible] fruit always pointed smooth shining !! flowers a little large. Men in [illegible] but not as large as in the form erectum.

I see glad you unite R. [illegible] with [illegible] I can see no difference.

[illegible] seeds sent you years ago a Carex [illegible] from here in fruit which I can not distinguish from C. [illegible] — But whether it grows further north I don't know. — It is the only one here, very common but rarely in fruit. —

Euphorbia polygonifolia and E. obtusata are very near, perhaps only geographical varieties — [illegible] not consent of [illegible] [illegible] an intermediate form. — [illegible] but E. obtusata is common in marsh [illegible] woods, far from settlements. [illegible] that I can see in fruit or seed, but the [illegible] E. polygonifolia are very [illegible] [illegible] [illegible] white, single or [illegible] E. obtusata [illegible] oval or oval oblong, [illegible] [illegible] [illegible] 3 feet high.

E. lathyris [illegible] has been introduced, I have seen some [illegible] But we have there in the [illegible] I have seen in some Herbaria under the name of E. lathyris, not which is a distinct plant. [illegible]

grows in the hilly country of Kentucky & Missouri etc. in
woods, ravines, banks of streamlets etc. — is biennial
(or perhaps sometimes perennial?) and prostrate — winter
rosettes of red leaves; and it appears to be also
annual. I have an evidently annual specimen from
Wapakoneta, O. in Ohio, not hardly different from the
Kentucky plant — & is the same (annual or biennial?)
from Hinckley, Cuyahoga Co. Ohio, in the Mountains of Ca[illegible]
— I have also an undoubted plant from the same
place, collected [illegible] mostly [illegible] (sometimes perennial?)
leaves ovate, very obtuse, the lower ovate or obovate, petiolate,
pinnately veined, heart-shaped, transverse (both ~~together~~ opposite
and ~~together~~ alternate); glands with very long setaceous
hairs; styles united at base, deeply bifid; fruit smooth
back, sides & base pitted all over. — Corolla pale blue,
leaves finally very long.

E. [illegible], [illegible] — the floral disk, on the
side, water, [illegible] & even slightly narrowed at base,
[illegible] with long horns, styles very short, united at base,
[illegible] highly emarginate (not bifid), pitted & ringed on back of
each carpel (very distinct already in the youngest fruit)
seed oval, pitted on the back, with two longitudinal
[illegible] on the face. — flowers, fruit, seeds,
much smaller than in the other. —

This is an [illegible] estray species, of which as you
know [illegible] Herbarium has sent several (new?)
[illegible] and I have one more from the upper Platte.
I will copy here a note I had made two years
ago on this Section

† Sem. facie interiore foveolat. & punctatis, exteriore laevibus

1. E. [illegible] n. sp. America; Georgia, Texas.

†† Sem. facie interiore 2-sulcatis, exteriore foveolato-punctatis

2. E. Pedicularis L. [illegible] Europa — caps. angulis elatis

3. E. [illegible] n. sp. America; caps. angulis obtusis. Texas

††† Sem. facie interiore et exteriore undique foveolato & punctatis.

4. E. commutata [illegible] biennis multicaulis Kentucky, Missouri

* pl. infer. [illegible]

p. [illegible] also simplex, Ohio Virginia?

** pl. caulatis

5. E. Lindheimeri p. annua Texas.

*** pl. basi late rosulibus, subcaulibus

6. E. Meschii n. sp. perennis, given to Upham with

I am working out Lindheimer, [illegible] & to me
I may enlarge on this and give it in a note —

In speaking of E. hyperifolia you say [illegible] seed [illegible]
[illegible] their size — you might have added black, [illegible]
the other Euph. stipulatae have reddish-gray seed.
You may add [illegible] E. humifusa, [illegible] I have [illegible]
[illegible] years ago. Short Collection, [illegible] in Ohio
[illegible] of the river, Sandbars, near North Bend. [illegible]
[illegible] has again been issued to me from
Europe, raised from my seeds. — A very good spec.
near E. maculata, but perhaps described already by other
E. humifusa [illegible] name [illegible] has been used I believe)

[illegible] diffuse prostrata, foliis globiusculis s. subtus subpilosis
ovato-oblongis obtusis, versus apicem serrato-semilatis,
basi obliqua sessilibus, capsulis acutangulis subpedicellatis
sparsibus (crinito-rubellis) obovatis minute tuberculatis.

About St. Louis in shady rich soil near the rivers. —
Near E. maculata, but leaves smaller, [illegible] rounder
shorter, seeds smaller (the smallest of all [illegible] to
me) but with obtuse angles (not sharp-angled as [illegible]
with minute warts, not wrinkled transversely.

About the species of Acalypha I can not say much
I have long distinguished two forms, which I suppose are you
A. virginica (with long petioles & horizontal broad or [illegible] leaves)
often called A. caroliniana [illegible] with large seeds [illegible]
A. gracilens with short petioles, [illegible] less dentate
leaves, and smaller seeds [illegible] to vary [illegible] and I think [illegible]
male spikes [illegible] appear to vary [illegible] and I think [illegible]
I could see intermediate forms [illegible] (but [illegible] at first
several years ago [illegible] third form, which seems [illegible]
under the name of A. monococca [illegible] you [illegible]
me; it was a form long known to you. I was [illegible]
that you without further examination took it for
A. gracilens. — to the smaller forms of which
[illegible] not close resemblance; it has many

entire ~~[illegible]~~ narrowly linear or lanceolate leaves
are only one not shrub is twice as large as the
two other, & is much more distinctly striate in part
the nerves are well seen by the naked eye which
is never the case in the other. — I think this is different
from Bigelow's & as a species I don't find it, but shall
be on the lookout to find the same plant again & if
possible cultivate it — You must find it
in abundance of A. monocera. I wanted your plants for me
I put it 18th. — We have I have striate or purpose
seeds but the true A. canadensis which I have
gathered here once 12 years ago, has tuberculate seeds.

Is Spiraea alba & S. corymbosa really worth
distinguishing? I find always difficulty with them.
The same with G. rectum & montanum; of this last
we have a form with short and one with long peduncules
of fruit. Have G. tinctorium & corn. both mostly to mention young leaves?

I was not aware of the difference of Abies balsamea
and Fraseri — in describing gender A. concolor but
still suppose it to be different for both — But how
does its fruit compare with the true A. balsamea?

Acorus Calamus grows in Illinois in swamps,
where it can not well have been introduced —

Ulmus americanus I have not seen flowers, seeds or
castings on them plant but the tree is common
here and it is very possible that ours may be
distinct in species —

Is it known if that is the derivation of the word, it might
be spelled differently. — We have here an earlier, stem
white flowering plant, scape more winged; on prairies, by
woods &c. — The blue one is late, seen under in
most in shady, moist places.

Calamagrostis arundinacea also on the beach on lake
Michigan

More at leisure I shall look through your [illegible] &
compare your notes on introduced plants with my observations
in this region

Second section of Equisetum has stomata in 2 rows in
each groove.

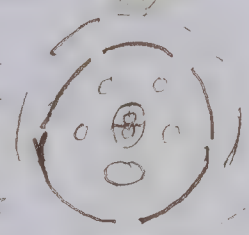
Dryopteris marginalis not le

St Louis May 25th 1871

My dear Dexter

I received your kind letter a long
while ago, which I hope you will not mind as
a mere thing of course, because I have had
to give you some [illegible] under cover
by the present time [illegible]

[illegible] a [illegible] in my
[illegible] the [illegible] [illegible]
[illegible] it is [illegible] you [illegible] the [illegible]
part of dissepiment [illegible]
the [illegible] are [illegible] [illegible]
[illegible] ridge [illegible] the [illegible] part of [illegible]
[illegible] of the [illegible] [illegible]



The [illegible] [illegible] by a [illegible] [illegible]
[illegible] membranes, which [illegible] [illegible]
[illegible] being [illegible] [illegible] with it, [illegible]
[illegible] separate [illegible] [illegible] of the calyx
[illegible] in that way in 5 [illegible] [illegible]
[illegible] calyx [illegible] [illegible] [illegible]
[illegible] open in 5 [illegible] [illegible] [illegible] [illegible]
calyx do not disappear as [illegible] [illegible]

[illegible] will [illegible] [illegible] [illegible] [illegible]
[illegible] he [illegible] [illegible] [illegible] [illegible] [illegible]
that he is [illegible] a [illegible] [illegible] [illegible]
[illegible] stay a year [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
common here [illegible] have seen the [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] the white, [illegible] [illegible] [illegible]
[illegible] spikes [illegible] [illegible]

Very cordially yours
G. Engelmann

[illegible] Cotton [illegible]

Mr. Jas. Frey
Carrollton
Macoupin Ills

[illegible] cinnamon. [illegible] January [illegible]
(no flowering buds seen, only [illegible]) [illegible] the
specimen from Sullivan [illegible] the spikes [illegible]
stalk is longer, smooth [illegible] less hairy, [illegible]
[illegible] in flower. [illegible]

Eupatorium [illegible] to exist be allowed
as there is already a [illegible] species of that name. Sp. Pl. III, 1792
I propose the name [illegible] given to it. E. gracilescens

Polygonum [illegible] (erect [illegible] 3–4 feet high)
foliis ovato lanceolatis [illegible] acuminatis, [illegible]
glabris ~~[illegible]~~ medis ~~[illegible]~~ spicis cylindricis gracilibus elongatis
subcernuis, [illegible] pedunculis et [illegible] [illegible]
laxis [illegible] [illegible] stig. 2. [illegible]
[illegible] medio impressis, laevibus.

[illegible] common in fields, [illegible] conspicuous.
It is the only [illegible] grown in this [illegible] where I
have seen here, [illegible] the small [illegible] less
common P. [illegible] which has [illegible] erect
short spike, [illegible] pedunculis & perig.
and particular, not impressed nuts [illegible]
[illegible] in Pennsylvania but that the [illegible]
large flowers, much larger imperfect seeds, [illegible] is [illegible]
a much smaller plant, with erect short cylindrical spikes,
thicker and shorter than in P. lapathifolium.

P. pennsylvanicum varies in the following three forms
as to flower:

1. 2. 3.

2 is the most common [illegible]
It is sometimes also decumbent, [illegible]
[illegible] form of P. lapathifolium, but [illegible]
[illegible] besides the other [illegible]

P. tenue has black [illegible] spots [illegible]
[illegible] they are brown — I have another species,

SEP 15 10 AM

Prof Asa Gray

Cambridge

Mass

Recd. Oct. 4th

St. Louis, Sept. [illegible] 184[illegible]

My dear [illegible]

your letter of Sept. 6 [illegible] received two days ago. [illegible] of Guajacum angustifolium — [illegible] has [illegible] Sida hispida, which can not [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] as [illegible] [illegible] opportunity [illegible] [illegible] [illegible] [illegible] you sent [illegible] [illegible] in a little [illegible] [illegible] [illegible] disappear [illegible] [illegible] I have found it 3 years ago in the [illegible] of [illegible] on rocky places, [illegible] have them [illegible] you [illegible] —

You say nothing about my Ancylophora monoica. I shall try to find time to look it up again this fall and examine and compare it. [illegible] like a variety of [illegible] [illegible] but the [illegible] [illegible] strange. —

I have all three Bolivarias growing, but [illegible] other plants which have come up [illegible] [illegible], the large Gilia, his Talinum and others [illegible] disappear again —

I am sorry you had not Wislizenus [illegible] Let me know if you want any part of his collections — How did you like the compositae [illegible] every thing from the Mountains [illegible] of Chihuahua is new! The new Zinnia is in fine flower now. — I have also a new and quite interesting Gentiana Wislizeni from there [illegible] [illegible]-flora, but fauce barbata, calyce fisso spathaceo, (like G. lutea!) —

Have you seen Gregg's Eustoma? I have the same of Wislizenus, it can hardly be E. exaltatum or [illegible] if [illegible] is correct. — The Erythraea

of Lindheimer are fine — [illegible] possibly [illegible] may [illegible] me — but which one is Texensis — I have a third from Mexico —

I have studied [illegible] Solanaceae of Lindheimer, Fendler etc — I find many fine things — [illegible] 3 species of Sarcostemma (1 Texas 2 Chihuahua), etc — [illegible] new ones — If I know that I would not interfere with Torrey, who several years ago undertook to monograph — I would publish them separately with drawings of the flowers and its parts. — [illegible] as done, [illegible] may be copied. — [illegible]

If Torrey doesn't want that part, I should [illegible] be willing to undertake the Solanaceae of Expl. Expedition —

I have never studied Solanaceae much and could hardly undertake them.

I was perhaps wrong about Hedeoma — [illegible] look at it again. — A. Cobata [illegible] different if Punch figure is correct. [illegible] strong disciminantum. —

I can take Euphorbiaceae of Expl. Expedition but have nothing but Lindheimer to assist me — but before that it would be done as with Cucurbitaceae.

Yours truly

J. Donnell Smith

distinguish from all rest and shall give you below a long note on them.
88. is probably your G. altiflora — if so it is not Lobelia's nor is it a variety of G. maculatum. 89 also most probably G. F. montana but will stinguish from my G. pedicularia. — You say I will have to decide to which of these G. perennis belongs. — Unfortunately I have sent you the only specimen of 90 and can not examine that, nor state to which of my species it belongs or whether it is distinct.

I shall be delighted. —

My labels, by an accident, which I have said you — you don't mention it in your list. — Shall Rel

136 is the one examined by — 135 appears to me to differ specifically from 136 in the leaves, but shall be less accurately, therefore take it for the same as G. gracilis but shorter less accurately, therefore
[illegible] spikes after flowering not spreading, as is always the case in P. [illegible]
spike much more slender, teeth of calyx half as long as the calyx, corolla
calyx hairy — in P. cand. teeth as long as the very calyx. Corolla tube
— lobes narrower more glandulous. —

137 approaches the common form of P. violaceum, but point of leaves
longer, calyx more villous.

138 ought to be distinguished as var. gracilius. Leaves longer, slender,
not so crowded; calyx with very long silky wool; teeth as long as tube.
— [illegible] form of P. violaceum ~~but~~ ovary and lower part of
style villous but calyx teeth longer than tube —)

140 T. foliosa — involucrum
not a much shorter".

158 [illegible] specimen with ripe fruit, in last issue you said accidentally
forgotten. It is a Phace, [illegible] fruit only; appears only little differing with a
pure 159 Ph. biflora (a [illegible] name or an plant with long spikes —
I [illegible] it is an ex [illegible] candidus plant, with chrolous flowers,
short spikes &c. — ours has long spikes much longer than leaf
pale purple petals etc. — Corolla hairy Border female, emergent,
[illegible] about the length of the leaf; figure in 158
not in 159 [illegible]

180 was also laid aside and forgotten — It is as I take it a near
Acacia of which I include in this letter a description, a leaf and
a flower head. —

124 [illegible]

125 [illegible] stem pubescent at base, [illegible]
[illegible] less crowded, spikes fewer, less crowded; more slender
more [illegible], long; tapering; flowers large, calyx teeth more
[illegible] — I have the same from Texas [illegible]

[illegible] 6th

[illegible] — [illegible] necessary to treat of Cordylis — Yucca — & Cacti more
[illegible] I hope you will let it pass in notes, if you would approve
of it. — I will now copy my notes on Anthyllidae, a genus [illegible]
[illegible] then I go to work on Euphorbiaceae & Pini [illegible] hear from
you again.

Very truly yours J. Engelmann

17. Cordylis montana n. sp. caulis multiradiis erecta s. diffusa, foliis gracilis, bipinnatis, laciniis obtusiusculis s. crenato-acutatis; anthers lanceolatis acuminatis, crenulato-ciliatis; pericarpiis glabre brevioribus; petalis exterioribus (altero longe saccato-calcarato) dorso carinato-cristatis, interioribus superantibus; siliquis tandem sparsim glanduloso-pubescentibus, petalis s. pendulis; seminibus non annulatis, lucidis, ovoibus.

Sandia Mts. moist creek bottoms and dry gravelly out of Creek in flower from April to July. — Seed intermediate in size between C. aurea and C. aurea, flowers larger than in C. aurea, near C. crystallina, [illegible] distinguished by the larger pedicels and the shape of the pistil. I add the characteristics of two other new species and if C. aurea to which all three bear a considerable resemblance.

C. crystallina "annua, erecta, ramosa, foliis, succescentibus bipinnatis, laciniis linearibus, acutis; anthers ovatis, acuminatis, integris flore brevioribus

[illegible] I expect soon a letter from you, and shall then write again.

Yours truly
[illegible]

Prof. Gray
Cambridge
Illinois

[illegible] 10

Alton, Oct 6 28th 1848

My dear Doctor,

A letter from Lindheimer including a Malva reminds me to send you some early flowers of it — also one of a Silene which he has collected in South Texas 1842 and which, if I don't mistake, I have already sent you a description of with my notes on Cicuta and Chamaecrista 1844 or 1845. I have copied the notes again and send them. I had named the plant at the time S. heterocarpa on account of the curious pink so different from any other — still the plant is very nearly related to S. hispida. —

A few notes on Silene hispida are sent also.

I am still taken up with a review of all my Euphorbiae but the Exstipulatae do not trouble me so much as the stipulatae, and in a day or two I shall be through with all; before I then go at the other Euphorbiaceae I shall copy my notes on Cicuta, Scutellaria, Gentiana and Euphorbia and send them to you. Meantime I expect to get from you a new list of numerous Fendler's plants, when I will try to look after them also — if I don't offend you — which I hope it not the case. — On the contrary, my remarks are all made with the reference to your views, and subject to your final decision.

Those plantae Wislizenianae, which are incidentally described with Fendler's or Lindheimer's may be introduced in notes. —

Fendler has collected a single specimen of the anomalous and singular Euph. hexagona Nutt; — perhaps some other of my new species are already described but for want of books I can not say. N.B. Kunth has already an Euph. acuna, Nuttalls name must therefore be changed and I propose again my original name E. gracillima. —

Fendler after many plans to settle here, in Chicago or elsewhere — and after other projects to visit Sonora

in some tropical country, which last I have taken great pains to dissuade him off — has resolved to go next spring to New Mexico again.

We must do something for him now. The first that I shall do is to give him some occupation (distributing sunflowers plants, collecting bills etc), for which I am going to pay him something (i.e. 100 or 120 dollars) I suppose him, till he can go west. Meantime he has leisure, and is willing with me to study a little more botany. —

We must try to get now Lowells' and Nuttalls money and something certain from the first or birth for every year. — Further we must try to get him some little clerkship or other government office, which will support him there, without occupying his time too much. —

Arenthobium I have not yet examined; but have conversed with Fendler about it. There must be some confusion in Fendlers notes on the labels.

281 (311) is the largest, most densely clustered plant; grows on species of Juniperus; all the specimens have ripe berries — there have probably no male specimens been collected.

282 (312) is the smallest, most slender and loosely branched plant; found only once or twice on Pinus edulis no flowers? The remarks in Fendlers notes match along to the following (about the "berries" and quadrangular stems)

283 (313) is the stoutest with strong quadrangular branches, more common the the last — female flowers (which Fendler took for berries) — it has always been found on Pinus Cachyptera — N.B. The locality of both on these two different Pines, is certain, as I have specimens ——— still adhering to branches of the Pines. —

I shall soon send you a long letter again

ever yours

J Engelmann

Does Hooker continue Geyer plants? It is more than a year that I have not got his Journal. Any thing about Euphorbiae in it!

In the April No 1846 I find a Bolivaria robusta Bentth with ovaria bilocular, loc. biovulatum;

Our B. scabra from Santa Fe has ovar. bilocul, loc. 4-ovulat — finishing large and beautiful one indeed I name it B. Engelmanni.

The Oaks troublesome. There is certainly in all our Oaks which belong here no difference in the point though the leaves are almost pinnatifid or only lobed — red or brown in fall — Acorn whitish, yellowish or deep yellow inside! shorter or longer globose or oval — cups always the same. — The colour of the leaves in fall is no good criterion; some specimens of the same species vary (e.g. Q. nigra) All our oaks have long petioles. —

Polanisia trachyspermum, growing with me (for Lindheimer Seeds) 4 feet high, makes now small flowers with fewer and shorter stamens and short style! — The first flowers have only a few good stamens, most of the are very small and degenerated.

I have specimens of trachyspermum or at least of one with elongated stamens from the upper Missouri, the Arkansas, Texas etc. — The form which grows here on the river bank is the regular P. graveolens, and not more than 12 or 18 inches high. —

U.S. MON
OCT
20
10

Prof Asa Gray

Cambridge

Mass

[illegible]

[illegible] Apr 18 [illegible] 28

[illegible] Torrey [illegible]

[illegible] 157

[illegible] or 158.

[illegible]

In one of my letters from the end of last year [illegible] a note on Wislizenus' Loranthus — I sent the [illegible] specimen.

156 Conquinvalvi, white flow[illegible] shrub 2 or 3 [illegible] coll. Sept. 17th in full flower [illegible]

Wislizen has also coll. Argemone hispida [illegible] about 4 inches diameter! [illegible] white (large fl.) A. mexicana south of [illegible] — I don't know A. grandiflora [illegible] you for all [illegible] names! — [illegible] to be [illegible]

[illegible] generally make only [illegible] copy of manuscript; therefore [illegible] the form of my diagnoses of Geranium [illegible] Dysnomia, the latter I have both described [illegible] on D. nodosa. The form (G. Fendleri & Mexicanum) I must request you if necessary to shape so as to correspond with the other description [illegible] like G. incisum [illegible] that the sporangium of all Eg settles [illegible] now? Have you [illegible] Tony — perhaps [illegible]

[illegible] also [illegible] 6 [illegible] not [illegible] Diligens, [illegible] Nestotus or [illegible]

I just compared Panni's notice of Geranium carpidosum — and believe that I must oppose you, I doubt that it can be = G. Fremontii

[illegible] must be dropped.

[illegible] herbaceous — [illegible] flowers are sterile; [illegible] shaped margins. — [illegible] Chinese [illegible] away low [illegible] — which the same as [illegible] — Would not [illegible] the name X C. herbacea be better [illegible] ?

[illegible] 37 species — H. C. [illegible] Oregon now [illegible] any of the following [illegible]

E. inundata Torr.
E. prominulus (which however [illegible] difficult for [illegible])
E. [illegible]
E. [illegible]
E. peplidifolius [illegible]
[illegible] species (nothing but E. Ipecac ?
[illegible] nodosa (in Nuttall — is it the European Linnaea ?) nor any other of Nuttall, Torrey & Gray's species are not included — I have [illegible] 6 new Mexican species (Gray & Wright)

have therefore = Fl. U. S. [illegible]

[illegible] as I am now in [illegible] to study all the material, for [illegible] especially of the Euphorbias or if you say [illegible] of the U. S. and adjacent part of Mexico? [illegible] is too much to publish [illegible] U. States [illegible].

That I am not making species unnecessarily you may judge from the circumstance that I have Fendler 791. 80: & 795 — drawn to E. maculata as a north larger [illegible] varieties — but 797 I must keep distinct [illegible] the three known to me with undivided styles: [illegible] in the Mexican E. geyeri stigmas [illegible] and in E. lanat. [illegible] a very curious plant, they are [illegible]

[illegible] Tiarella, or Mitella, and Heuch[illegible]
I do not find Dr. Torrey, among his living [illegible], any of the same, 6 more; [illegible] — also 6
[illegible] South [illegible] has been
[illegible] and has selected
[illegible] provided [illegible]
[illegible] and [illegible] even selections. He
has been to see me yesterday, and showed me his collections.
They are small, but those of last spring made in the Natoma
Mountains, north of Santa Fe and Taos contain many fine things.
I get a set from him. I would select one for you immediately,
if I knew, you would want one; tell me directly — also
one for Lowell. — I expect I could get Gordon to let me
[illegible] — if you, leave all the better known plants out,
[illegible] only the rarer ones — I would be [illegible] out
[illegible] Vesicaria alpina — but unfortunately I dont know
[illegible] many of the more common Rocky Mountain plants, which are
[illegible] — [illegible] I could select many
which you already are familiar with. — For Lowell I would
[illegible] a full set including everything — among the plants
are two other Vesicarias one of them Gordon has sent
with Lord Stanley [illegible]) also Mentzelia Nuttallii
and a number of others unknown to me. — If I should
have that [illegible] would be [illegible] take
the opportunity to make the selection at once.
— I have just seen Gordon; he leaves here in a day or two for the
South — but leaves his plants here, — and I have the privilege
to select any specimens I may want, but they are
mostly small and he asks for each single one 10 cents.
So let me know — Among his plants are a few specimens
of my Ptyrea Wislizeni — also flower[illegible] specimens
of your Mimosa borealis! and some other fine things.
[illegible] today looked at Epilobium
[illegible] — [illegible] style smooth slightly [illegible], [illegible] every 2
[illegible] [illegible] stigmatic style [illegible] 2
[illegible] No 135 [illegible] Epilobium style [illegible] much [illegible]
[illegible] on account of the persistent [illegible] which forms a spine
[illegible] spine! Within [illegible] 1564 [illegible]
[illegible] — [illegible] style [illegible] different! [illegible]
letter is full enough — I send it off, and soon write again
now. Yours Very truly Yours G Engelmann

[illegible] Dr. Torrey [illegible]

St Louis Mo. 15th 1848.

My dear Doctor

I have just finished the Examination of all my Uvaria and have copied most of my diagrams for you and [illegible] manuscript [illegible] anything to it. — You will be astonished that I separate the [illegible] Uvaria from the European ones — at least from U. alba [illegible] known to me. — And if the [illegible] is a good genus, Spiraea is also [illegible] in 4 different species I have found the [illegible] and send you some flowers of the largest species [illegible] to examine yourself — Take care of it for you; genera! — [illegible] further see that I have finally determined to separate Sp. juniperinum 281 from U. cupulata or vaginatum — at present [illegible] with strength [illegible] to [illegible] satisfied that the distinguishing characters will be found out.

A sketch of Hookers figure and if possible a small fragment of Nuttalls and Hookers plants male & female, and especially a fragment of A. Oxycedri from Europe would be very important, and indeed necessary to finish my study of that genus — if you can let me have that, I should be very grateful for it [illegible] fear of [illegible] A. Oxycedri with any of my species, but I am afraid [illegible] Nuttalls [illegible] of [illegible] species [illegible] as well as female flowers [illegible]

Prince Salm now acknowledges Chiococcus as the first [illegible] of the principal divisions of Cocceus, and adds a number of species to it. [illegible] you may say in my opinion Caeli

Sect 1. Chiococcus, caule humili, scape resi ramoso, floribus [illegible] tubo abbreviato, embryone subfusiforto, cotyledonibus [illegible] nat[illegible]issimis. — and then the 3 subsections

Though the cotyledons & embryo hardly belong to a sectional division still it is well enough to bring them in here; — Opuntia the same thing will have to be done.

I include a plant which Fendler found among his, apparently forgotten. It is no doubt a female plant of 714 — what is it? male fl. perigon woolly, 4 parted, 4 stamens free. — [illegible] woolly, [illegible] thin, [illegible], pubescent, [illegible]

Fendler is a restless fellow, and has now the idea of going to California. I try to dissuade him, but of course can not force him. I have told him that Lowell and Nuttalls 200 & 100 dollars have been offered only in supposition of his going to New Mexico; he wants me to bring about with you a change in this condition, but I told him to write to yourself about it, that I had no right to change [illegible] two weeks [illegible] if you approve, [illegible] you will probably get a letter from him ere long. I think it best to tell him, what is nothing but the mere truth, that New Mexico [illegible] with limited means, transportation cheap [illegible] easier [illegible] richness of flora almost as great [illegible] that after one or two years he might [illegible] get [illegible] if he chooses; — but that the "mountains of snow" are not so easily explored as he appears to think, as they are more distant from civilized or [illegible] inhabited regions. — I should really prefer somebody first to explore New Mexico before we go further!

[illegible] a young German physician, Dr L. Jürgens came to see me. He has gone to Independence, and will start from there for the West next spring. [illegible] is his principal business, but he intends also to collect plants, insects and as his means are very limited he will get out of his expenses by his collections. I do not know a thing about him, still less how he will collect etc. — I have offered him the same advantages which Fendler have had, which he has thankfully agreed to — he does not ask for any remittances before collecting [illegible] in my [illegible] the price of sale, I told him, would range according to the condition of his specimens. I tried to persuade him to remain in the Mormon settlement near Salt Lake, and collect there for a season, [illegible] going to California, and he thinks favorably of it. He expects to stay at least 3 years there in California. — [illegible] I don't know, whether any thing will come out of this as [illegible] never collected before. But I hope [illegible] to be intelligent and very zealous, but [illegible] experience. —

Fendler has a mind to sell his Santa Fe Collection, if [illegible] of about 300 or 400 species, [illegible] The Northern [illegible]

[illegible] to buy it [illegible]

I did hope [illegible] correct [illegible] with [illegible] in a letter a few months ago. [illegible] exhibit [illegible] more common here, [illegible] average [illegible] so [illegible] rapidly [illegible] from [illegible] sometimes [illegible] the leaves [illegible]

Sunday Nov 19.

My dear Doctor

Late last night I finished this never ending epistle, by copying a number of diagrams. I believe I told you that I have from Fendler, [illegible] drawn up a sort of sketch of his expedition [illegible] Localities etc which may form a basis for a flora of New Mexico [illegible] adding the number of the plants found there — the numbers are all the old ones (as well as the [illegible]) —

I wish you would compare [illegible] the seed be different from [illegible] different — perhaps belonging to [illegible] — or both belonging together as sections of [illegible] I must leave that to you. In the Cat[illegible] character must be modified. You have both [illegible] and [illegible] specimens for us, so that you can judge yourself, and must have [illegible] which I think is different [illegible]

The Callicandra from Chihuahua you must also have [illegible] Bigelow's Medicinal Plants, [illegible] would form an interesting study — Callicandra chamaedrys may be added [illegible] Is it the same as your [illegible] plant?

[illegible] in [illegible] Nolepiedeae thrown off the [illegible] from my shoulders! am glad of it; I should like to be done likewise with Euphorbiae, as I do not feel clear myself about them. I can not get rid of them. — I shall begin to copy [illegible] and then hash the rest of it [illegible]

[illegible] of the [illegible] plants [illegible]
[illegible] occasion [illegible]
[illegible]
[illegible]
[illegible]

I hope you will not be [illegible] by the [illegible] [illegible] [illegible] [illegible]

[illegible] that [illegible] not [illegible] [illegible] cannot any other [illegible] [illegible] [illegible] to you.

[illegible] [illegible] [illegible] and [illegible] [illegible]

Very truly yours

G. Engelmann

[illegible] with me, he has no copies of [illegible] [illegible] [illegible] [illegible]
[illegible]

[illegible] writes me he has sent [illegible]
[illegible]
such [illegible] perhaps [illegible] give [illegible]
[illegible]

If you think the excursus on [illegible] [illegible]
[illegible] it may be [illegible]
[illegible] my Euphorbiaceae. What say you? — that is, if you think it worth it. — [illegible]
[illegible]

pedicellis brevissimis; petalis exterioribus (calcare crassissime saccato – calcarate) dorso carinato – cristatis interioribus superantibus; siliquis ovatis, acutis dense glanduloso – pubescentibus erectis.

Western Missouri and Arkansas on fertile prairies. May & June. – C. aurea. β. ? crystallina Torr & Gr. Fl. I, p. 665. The pubescence of the ~~pod~~ erect almost sessile pod consists ~~of~~ in the ~~fresh~~ dried plant of transparent vesicular hairs, whence the name.

Corydalis micrantha n. sp. annua diffusa, foliis glaucis bipinnatis, lobulis lanceolatis acutis s. obtusiusculis. Bracteis oblanceolatis, ~~acutis~~ acuminatis, integris, florem aequantibus, pedicellis brevissimis; petalis exterioribus aequalibus vix saccatis, interioribus vix superantibus; siliquis torulosis ~~laevi~~ glabris erectis, seminibus non annulatis, lucidis, laevibus.

Canada on rocky wooded hills on the banks of the Mississippi. May. R. Richt. – Flowers only 2 lines long, almost linear, pale yellow – forming very short racemes; pods half as long as in C. aurea seeds half the size, destitute of the ring and not punctate.

Corydalis aurea Willd. annua, diffusa, foliis glaucescentibus bipinnatis, lobulis lanceolatis, acutis; bracteis lanceolatis, s. ovatis, acuminatis, integris, pedicellis florem aequantibus; petalis exterioribus (calcare saccato) dorso nudis, interioribus superantibus; siliquis glabris torulosis pendulis; seminibus annulatis ~~subtilis~~ subtiliter punctato – rugulosis.

Geranium. I have 6 species of perennial geranium upon me, which I pray you to distinguish by the following characters. – The names which I put to them may stand temporarily; ~~as~~ Geranium Bementii Torr and G. incisum Hitt are not known to me – and I leave it to you to substitute these names where they belong. – May not incisum and Bementii be synonymous?

Geranium

Perennia, pedunculis bifloris, petalis integris, basi villosis, valvis capsulae laevibus (non plicatis) plus minus pilosis.

× foliis reniformibus, seminibus reticulato fossulatis.

† pedicellis inflorates erectis.

shady moist places in the valley of Crooked R. Aug. Sept.
erect, 12-18 inches high, some early specimens only a few inches high.
leaves glaucous below, not very pressed hairy ~~above~~ on the upper surface
easily distinguished by the almost glaucous light green stem and the ~~flowers~~
white flowers, which are one inch in diameter, peduncles generally about
twice as long as pedicels, leaves 2-3 inches in diameter, sepals
rotundate-ungulate while in the foregoing species they are smaller
and very finely ungulate. — It differs from C. biflorus Lodd. in the
petals which are ~~broadly~~ obovate entire not deeply emarginate or bilobed as
in that species; and by the pedicels which are in the axilla of the
not longer than the flower ~~and~~ much shorter than the peduncles, and
erect after flowering (according to Lodd's figure, Tr. Hort.
Fl. Cross. 18. —

If this should be disproved from your [illegible] which I must
a word more, the name [illegible] Pseudostylus [illegible] figure

We also learn here, how the cavities ~~in which the~~ of the shackles are formed in which the flowers of this genus are immersed. They evidently consist each of two lateral, connate bracts, as we see it distinctly in this species. — ~~Another question~~ is whether Retanilla ceratinii on V. cupulatum and ~~sarmentosum~~ the same as our species from the cold mountains regions of Mexico. It is [illegible] it [illegible] plant, that I dare not separate it [illegible] however that the structure of the flowers, spike, ~~with [illegible]~~ [illegible] and our plant other, ~~[illegible] most of the leafless Visca~~ ! —

[illegible] are 8–10 inches high, forming thick bushes; stems often ½ inch in diameter; ~~flowers~~ spikes 1½ l. long, fruit 0.5 and 0.6 l. ~~in diameter~~, and berry about 2 lines in diameter, [illegible] of a reddish champaign colour. — This species appears to be nearly allied to Viscum vaginatum H.B. and V. cupulatum DC. and the description of the latter almost entirely agrees with our plant, but from both species ours is distinguished by its terete and not quadrangular stem. It would be an interesting question whether all leafless Visca [illegible] genus or [illegible] Tacc [illegible] is retained in Viscum proper or whether they together form a genus distinct from both. In Arceuthobium we have already a genus which belongs to both the old and the new world.

III. Arceuthobium M. Bieb.

1. A. robustum n.sp. glaberrimum, caule ramisque robustis, aequilatere quadrangulatis, articulatis; articulis abbreviatis; foliis squamaeformibus, connatis truncatis, cuspidatis, carinatis; floribus ~~in ramulis~~ axillaribus terminalibusque, spicas ramosas formantibus, masculis 1–3, femineis singulis obsoleter stipitatis in quavis axilla.

[illegible] Fe [illegible] Pinus brachyptera only, not rare. N. Fendler 283. Stems [illegible] only 3–4 inches high, but stout, 1–2 lines in [illegible] often of a reddish orange colour, flowers and [illegible] 98 l. [illegible] 0.7 l. transverse in diameter. * This as well as the following species appears to differ from [illegible] in the inflorescence; the [illegible] having "~~the~~ female flowers [illegible] in threes on the [illegible] of the branchlets" [illegible] rudiment of ovary in male flowers small triangular. There are [illegible] overtop [illegible] coming out [illegible] part, [illegible] in the principal [illegible]

2. A. gracile n.sp. glaberrimum, caule compresso-tetrangulato, ramis quadrangulatis compressis, articulatis [illegible] foliis squamiformibus, connatis, truncatis breviter cuspidatis, vix carinatis; floribus axillaribus terminalibusque, masculis 1–2, femineis singulis subsessilibus.

Santa Fe, rarer than the other species, only on Pinus edulis. N. Fendler 282. Stems 4 inches high, at base 1–1½ l. in diameter, [illegible] spreading often [illegible] erect; [illegible] or short lines (the terminal [illegible] obsolete); branchlets very much compressed, not 4 angled. Spikes not regularly spiked as in A. robustum, but sometimes single in the axills, or

[illegible] Tribbed leaves alternate
spreading. [illegible]
[illegible] and [illegible] all
[illegible] spiked flowers.

[illegible] none or [illegible]
639 Cuscuta umbellata H.B.K. [illegible] capillaris
[illegible]
[illegible] filiformis subtaliter [illegible]
[illegible] aequantibus. Stylis [illegible]
[illegible] corolla marcescente [illegible]
[illegible] Santa Fe [illegible]
[illegible] in the upper Canadian almost excludes
by the power of [illegible] Growth. [illegible]

[illegible] the new Mexican plant. [illegible]
[illegible] is varied to [illegible]
[illegible]

[illegible] in the European [illegible]
[illegible] with such [illegible]

[illegible] Cuscuta [illegible] Lagasca in Plant. Ind. [illegible] is [illegible]
[illegible]
[illegible] Arkansas. The species is
[illegible] very small [illegible]

[illegible]

90. Geranium Fendleri n. sp. [illegible] caudex diffusi [illegible] = que [illegible] [illegible] um [illegible] W. [illegible] 5-7. partitis simu[illegible] subcrenatis, superioribus tripartitis basi truncatis; segmentis [illegible] trifidis obtusis mucronatis [illegible]; [illegible] pedunculos abbreviatos longe superantibus, glanduloso-pubescentibus, deflexatis erectis; sepalis [illegible] glanduloso-pubescentibus mucronatis; petalis late obovatis subemarginatis, basi villosis, ad unguem pilosis; filamentis pilosis-ciliatis, carpeum sub superantibus, stylos medio ima parte solum connatos sequantibus; valvulis capsulae pilosis extra glanduloso-pubescente; seminibus tenuiter reticulatis.

Bottom land of Moro river, ~~in thickets~~ among shrubs [illegible] August. — stems weak, [illegible] 2 feet high, [illegible] 3 inches in diameter, lightly hairy; peduncles 1 to 2 inches long or less; pedicells 1/2 - 3 inches long; [illegible] 1/4 inch in diameter. — Rather too [illegible] G. [illegible] [illegible] it may be distinguished however by the [illegible] stem, by the thinner, smaller leaves with narrower or truncate base, by the shorter petals [illegible]

Copies are to be sent of the petitions & letters to the Capital petitioners, state petitioners, & the magistrates & other officers. — The seals of my [illegible]

Eisenmannia n. gen. Calyx campanulatus, 5-dentatus, dentibus superioribus latioribus, remotioribus, infimo angustiore, longiore. Petala 5 in corollam papilionaceam disposita, vexillo orbiculato, cordato, integro, carinalibus distinctis. Stamina 10 cum fissura dorsali monadelpha. Antherae globoso-ovatae 1-glandulosae. Ovarium 2-ovulatum. Stylus capillaceus, uncinato-recurvus eglandulosus, stigmate acuto.

Frutex mexicanus, inermis Eysenhardtiae facie. Folia impari-pinnata, 3-4 juga utrinque nigro-glandulosa et pellucido-punctata; foliola minute stipellata. Racemi terminales paniculati, multiflori; calyces glandulosi ~~multiflori~~, villosi; flores albi; ovarium stylusque pilosus.

Nomen in honorem punctari Eisenmann med. doctoris et ~~viri~~ autoris illustrissimi et de rebus germanicis bene meriti. Eisenmannia Schlchtl. = Blainvillea Cass, fide Endl.

Eisenmannia is distinguished from Eysenhardtia by the orbicular vexillum, glandular anthers, capillary eglandulous style and acute stigma. Fruit not seen.

E. Wislizeni n. sp. Mountains of Coyoacan, west of Chihuahua, Dr Wislizenus, fl. Sept. — A shrub with whitish bark 2-3 feet high. Leaves 2-4 inches long; leaflets oblanceolate, entire, 8-10 l. long 2-2½ l. wide, numerous pellucid dots besides the black glands; stipules with a large gland between the upper end of both cells; style flexuous, very slender, upper third hooked.

I leave it to you, whether you think best to unite both, and make 2 sections of them, you must alter the character of Eysenhardtia then. If you will be able to compare Kunth's figure of E. amorpha and can then say whether it, in reality, belongs. — But as you say, you think it identical with E. Drummond I have given it here. It is certainly different if the characters: fil. diadelph., spir. solitary — are to be relied on. I rely less on the difference of E. Drum & E. Gregg.

almost obovate petals. G. pentagon [illegible] remarkably stiff and erect [illegible] with prominent [illegible] [illegible] etc.

[illegible] Nuttall [illegible] pubescens resin [illegible] 5, [illegible]; segmentis obtusis, [illegible] 2–3 centralis, [illegible] obtusis subcuspidatis, [illegible] pubescentibus; [illegible] glandulosо-pilosos deflexatos crectos [illegible] superantibus, filamentis [illegible] [illegible] ~~[illegible]~~ obtusis [illegible] [illegible] sulcum connat. bracteolis, [illegible] capsulam pilosis, [illegible] subemito, seminibus [illegible] ~~[illegible]~~ [illegible].

Rayios [illegible] D. 7h3. [illegible] smaller plant than all the others [illegible] here. [illegible] leaf 1/4 inch [illegible] 2 or 3 lines long, sepals 2/2 [illegible].

[illegible] Northamerica [illegible] [illegible]

13. [illegible] Wislizenii (Engelm. MSS.) "[illegible] discum; [illegible] pilosa
stricta [illegible] vel superne [illegible] pilosa;
folia [illegible] alternatis, [illegible] pilosa; [illegible]
alae [illegible] stipellatis; foliolis coriaceis, [illegible]
[illegible] interdum [illegible] dentatis, subtus
[illegible] pilosis; [illegible] ovatis, acutis, mucronatis;
[illegible] rarius ovatis, [illegible] vel oblongis, [illegible]
[illegible] stipellatis. [illegible]

Santa Fe, in shady places along water courses, flowering in
in fruit only. A variable but well characterized plant,
amply distinguished from the preceding by the petiolate,
stipellate leaves, the [illegible] (right [illegible]) division of
the [illegible] of the leaflet, the [illegible] expressed, and
the [illegible] (that of S. Wislizenii is terete, the prominent ribs
all equal.) Leaflet in some specimens of 18–24 inches
length, only 3 or 4 lines long; in those of [illegible] 3 feet in
length from 8–10 lines long and wide. [illegible] articulate.
A few specimens of the [illegible] were mixed with this species
Distinguished by the sessile leaves, [illegible] G."

flowered Missouri [illegible] the [illegible] species of C. [illegible] as [illegible] always [illegible].

16. Argemone hispida [illegible] Catalogue 20 & 21 : capsula oblongo-ovata hispida, ~~spinis~~ aculeis longioribus hispidis subrecurvis stipata, ~~semoribus~~ apice [illegible] seminibus majoribus.

A. mexicana (from Catalogue 17) [illegible] Walnut creek in Prairie — [illegible] (the same [illegible]) [illegible] glaucis aculeis brevioribus [illegible] stipata, apice [illegible], seminibus minoribus.

[illegible] species [illegible] in my arrangement of Fenzler's plants, it ought to be [illegible] as 16, 1

Rhododendron

DEC 2 0

[illegible]

a general thing of it including [illegible]

[illegible]

[illegible] with [illegible]

[illegible] with [illegible] others.

[illegible] no making

to [illegible] with them [illegible]

[illegible] that you [illegible]

[illegible] & [illegible]

[illegible] distinct, as you will [illegible]

[illegible]

[illegible] to the [illegible]

[illegible] and takes off a great [illegible]

[illegible] attention [illegible]

[illegible] advanced. [illegible] letters

[illegible] etc. etc., with

[illegible] that Weisigers may also go

[illegible] we have to expect plenty of plants [illegible]

[illegible] etc. —

[illegible]

[illegible] not received [illegible]

[illegible] advances ($ 250), he has

[illegible] between 300 & 400 more, which have not been

[illegible] yet, [illegible] subscribers, [illegible]

sets not received, [illegible]. He has [illegible]

and you could set him subscribers etc — [illegible]

[illegible] to some extent [illegible]

[illegible] advertisements. — [illegible]

[illegible] Cincinnati [illegible] you

[illegible] $ 200 [illegible]

[illegible] 2 children [illegible]

[illegible] surely a [illegible]

[illegible] through [illegible] negligence [illegible]

[illegible] plants [illegible].

[illegible]

$ 100. — [illegible]

[illegible] in your set [illegible] more, [illegible]

[illegible]

[illegible]

[illegible] readily? [illegible] it [illegible]

next package to you, [illegible]

You send in your last letter a check for $ 37, for [illegible] $ 10 and for Cleveland $ 27. — Now you had already sent in August $ 25.40 from Cleveland (set No 19) and I don't know what this $ 27 is for, perhaps a mistake of yours. I will include on a separate sheet the account of Cleveland plants; preserve it and continue the account, [illegible] get some regularity

[illegible] things.

[illegible] to send to you [illegible] will [illegible] expenses [illegible] (especially [illegible]) [illegible] in the [illegible] expected [illegible] such a [illegible] box? ...

[illegible] you [illegible] package sent [illegible]
you have [illegible] included [illegible] for [illegible]
duplicates, [illegible] correspondence [illegible] here.
Since then [illegible] sent you [illegible]
from here [illegible] set [illegible]
[illegible] pending with [illegible]
reference. — I have still [illegible]
my [illegible] himself for Hooker, [illegible] will be sent with
[illegible] plants [illegible] them [illegible]
[illegible] sea [illegible] have a [illegible] to [illegible] things [illegible] H. C.
[illegible] Boston
for your set of [illegible] plants I have paid [illegible]
[illegible] for Lowells [illegible] [illegible] you were [illegible]
on that [illegible] & [illegible] [illegible] notice [illegible] will [illegible] the [illegible] in the package

Could you not when you happen to be in New York settle my old [illegible] with [illegible] & [illegible] & get Geyer's set back. I owe them a [illegible] bill for books.

Prof A. Braun sent me the following names of plants
Fendler 1007. & 8 Lemna trisulca & minor. [illegible] not distinguish them from European specimens [illegible] also [illegible] doubtful [illegible] the specific difference of Lemna [illegible] [illegible]
1024 & 25 Selaginella rupestris, [illegible] of spike [illegible] leaves [illegible] ciliate [illegible] no specific [illegible]
1017 a & b. Notochlaena nivea. [illegible] known from [illegible] & Mexico [Is that not Cheilanthes [illegible] [illegible] both identical ?]
1016 Cheilanthes tomentosa [illegible] too young & [illegible]
1015 Near Ch. lentigera & Ch. scariosa [illegible] perhaps Ch. minor Martens & Galeotti
1026 Chara foetida A.Br. (= Ch. vulgaris Auct.)

Lagina decumbens Ell. is now with abundant specimens proved to be the same as our Sp. reptans, Lagina Linnaei Hook or S. rupestris (Linnaei) but it is not [illegible] indicates and the whole appearance

[I had strongly remarked the same thing to you]

Lindheimer 78 Lina floridana

76 Selaginella rupestris

524 Anemia striata var. spor. frondibus pinnatis 4 5 jugis pinnis ovatis, acuminatis, basi obliqua subcordatis crenulato-serratis, venis crebris parallelis (non reticulatis), stipite laevi pinnis fructiferis (raris) et basin pinnis ortis.

Anemia Phyllitidis Sw et var (A. taxifolia Ha & cordifolia Desl, Haenkii Desl) differ at venis reticulatis.

75 Allosurus ternifolius Kunze; Pteris ternifolia Cav. Allosurus subcristatus Desl is the same plant.

76. Notochlaena sinuata Kunf. var argyrolepis, mihi Karwinski has collected the same form in Mexico

442 Cheilanthes tomentosa Link

141 same Cooley as last, but a distinct species belonging to the difficult group of Ch. Centigera; perhaps = Ch. lanuginosa Martens & Galeotti

461 Chara translucens Pers. [Not found in America yet, but known also near St Louis. Last fall by Tendle.]

Chara tomentosa Ruf and Nostoc coeruleum Lyngb., (living from the North of Europe) have been collected by Post-Master Francis Cooley Washington Michigan.

More determinations of Chara I send, when I get Manuscript of Plant. Lindh.

Dear Sir & Brother, I received your letter by Mr. Dix for his address of $150; he said Nos 1, 2, 3, 4, 43–48 were together, $125.40; so I have to claim the balance of $24.60; if you send it direct some one will be sent for it, or if you prefer the money to be sent here it will be at your disposal.

You say you get 150 copies for Rich. & Wm. Are the subscribers ought to get a copy; they ought if we sent to them as promised; that will take off already some 50 copies, which you may send by mail, letting me know to show you how we stand. Further Tendler ought to get a few copies. I send a few to distribute in Germany, as to Lapham, Curtis, Chapman etc. but you will sent copies to them directly. Let me know to show you send, so that we don't send more than one to the same person.

I hope to get the balance of copies in our favor from you.

I believe that is all I have to say at present. More I can or cannot say I expect a visit collect. from Lindheimer after 1848. He has not done much in that season.

Very truly

yours

J. Engelmann

MAR
6

Prof Asa Gray

Cambridge

Mass

[illegible] March [illegible] 9

[illegible]

[illegible]

I have [illegible] for healthy
[illegible] are [illegible] to that [illegible]
[illegible] with [illegible] in the [illegible]
[illegible] Southwest.

Thanks for the name of the [illegible] plants — No. 5
[illegible] Hesperis [illegible] — the [illegible] and
[illegible] transport [illegible] Atlantic [illegible] the [illegible]
[illegible]. It looks very much like [illegible] Brownii —
[illegible] cost [illegible] 62 [illegible]. I have had it from
Commodore [illegible] & it proves [illegible] that
it is one and pretty species of this Genus. Do explain
& send name, as also my diagnosis of three Clematis
[illegible] that we have not [illegible] species plants —

[illegible]

Jornada — Jornada means [illegible] a day's journey or [illegible]
a longer distance [illegible] water is found [illegible]
[illegible] travel long [illegible] [illegible]
Fodder [illegible] of 300, [illegible] pitta [illegible] 329, not 299
[illegible] 305 [illegible] 340 & 343 not 348
[illegible] the pag 63 of [illegible]

[illegible] that you begin to [illegible] those
[illegible] [illegible] [illegible] [illegible]
[illegible] that [illegible] [illegible] even varieties of
[illegible] species have been [illegible] into different genera!!

Traders will certainly go and dig gold!
You a pity Emory can not take a botanist along.
[illegible] the new Secretary of State will or
can do anything before the Expedition starts.

[illegible] collect and press well
good specimens [illegible] [illegible]
[illegible] to go [illegible] the [illegible].

Can you [illegible] No 31 possibly be [illegible] [illegible] with it
[illegible] Clematis? There is also a very [illegible]
variety in this collection.

I send letters [illegible] to go about the
No 27 [illegible] lately rec'd (from Clavella & [illegible] [illegible]
[illegible] 1.60. If [illegible] much [illegible] you have sent
the money before for Clem (with box)

You could send to Lehmann [illegible] 15 or 20 copies of
[illegible] [illegible], & be [illegible] to Prof. A. Braun, Freiburg
Baden, & be [illegible] by him to ~~[illegible]~~ Laboratory
[illegible] [illegible] to respond to [illegible] for many [illegible]
Fruits. — I have not received anything for the
[illegible] pag 96 [illegible] Feed, but our roads are in
terrible state, & the mail regular [illegible] paper [illegible]
not [illegible] since several weeks! [illegible]

I do not know anything definite about to Cuba, but know
it was mentioned once in a paper as being among those excluded,
but I never afterwards saw any word about it, I doubt the
fact. — You appear to me to labor under some mistake,
in regard to German affairs. Specimens e.g. regarding
our political affairs here have no conception of the
[illegible] of things in Europe; besides that all the news
[illegible] rumorings about continental Europe are here
[illegible] into the (anglo-am. English) papers through an English

channel. See, through English eyes, — you forget, I say, that government & people are two essentially different things, & are not necessarily antagonistic. Is not it the wish & hope of monarchy, or in nobility, or in the middle class to keep power, more and more, from nature, and the tendency of the age operate in the same direction. — Think the crisis, which have been innumerable, and will be many, that many mistakes have been made, and will be made, is natural, and to be expected. Let men call it so, as republicans, or liberals, etc. we are mere demagogues or at best selfwilled tyrants and experts who believe to do and to sacrifice everything for the people but nothing through the people. — They consider the people's notions as here, — all that is blind and we see such men have at times [illegible] refugees [illegible]. Nevertheless the firm stand taken by the liberal [illegible] (you have hardly yet with the same [illegible]) in Berlin and Vienna has had a great and [illegible] influence on the affairs of the nation in general. Prussia may have been waking up since 12 months, but it will take time and some severe experience yet to enlighten and instruct them sufficiently. — You may be assured that the mistakes and faults of all parties will hasten the development of the [illegible] which will soon be necessary to it. But you may rest assured that the mighty contest has not begun as yet, though it appears to be called for. The next few years or more probably few months — may be [illegible] will hardly elapse before the commotion take a fresh start again. — I repeat, you mistake the innermost essential nature of a monarchical government if you think it possible that by moderate and legal or loyal means concessions can be obtained from it, and secured. But enough of politics.

Ever truly yours

[illegible]

Cymandra umbellata Nutt. virescens, foliis ovato-lanceolatis [illegible] membranaceis infra [illegible] ~~mollibus~~ [illegible] ~~pro~~ [illegible] umbellis [illegible] [illegible]

Cymandra glaucescens [illegible] glaucescens [illegible] foliis [illegible] lanceolatis [illegible] floribus majoribus [illegible] as follows [illegible]

[illegible] other species 1½ – ~~1¾~~

2 C. Cong

[illegible] Cymandra [illegible] ovate [illegible] erect [illegible] base or [illegible] [illegible]

The [illegible]

Cleomella acutifolia n. sp. (Ludheimer, Texas) foliis [illegible] (0,12 lin. longis) [illegible]

Cleomella mexicana Nutt. 2 (Halsted, Mexico) – foliolis spathulatis, retusis mucronatis [illegible] Ovariis plerumque trifoliolatis; petalis sepala ter superantibus [illegible] brevissimum multoties superante, stipitem aequante; capsula [illegible] stipitem superante, seminibus minoribus (0,7 lin. longis) laevibus

Cleomella [illegible] (Dr. Gray San Pablo) foliolis obovatis spathulatis obtusis [illegible] margine serrulato-asperis; ovariis plerumque [illegible] sepala ter superantibus; ovario stylum bis superante [illegible] stipite gynoecio brevione (s. abortivo, stipitem aequante s. superante) capsula [illegible] retusa, stipite brevione, seminibus [illegible] (depends on fil[illegible]) [illegible] plerum frequently sterile calyx apparently persistent. Var. of last or distinct?

MAR 10 1870

Prof A. Gray

Cambridge

Mass

Answ. May 25

St Louis March 20th 69

[illegible]

[illegible] your letter of [illegible]
you [illegible] have been [illegible]
[illegible]

[illegible]

[illegible]

He has been [illegible] of the rifles
[illegible] you the money; both say he [illegible]
[illegible] Gen. Wright [illegible]
[illegible] I expect to hear that Franklin has
[illegible] in his California project [illegible]
letter came with that of the Secretary and he
abandoned it; he goes to the Salt Lake now [illegible]
[illegible] for 2 [illegible] mules of Hall, 100 [illegible]
for Fendler. N. You sent from Kinder, $32.16
while his sol is marked 33.60. Exchange?

Fendler has bought him a waggon and
intends to go with his brother as assistant. He has
also been with him ~~with the Utes~~ at Santa Fe
to the Mormon Settlement. The understanding is

that he remains there a short time yet, or that he returns again in a few days hence.

Everything is right so far, I think.

Mr. Hendrick is here, & you have in his letters, papers & particulars, as he states —

The same for other Mr. Letters & Calif. emigrant lists I spoke of will come by this back, at least some will. —

You have now Wright on hand. Mr. Hendrick will also collect for you, but as he will go to Europe — but I also have some more to collect for me. Dilligence will probably, the Calif. & the Pacific Mail Steamers — The only — for exchange with me on the opposite side of the to 1st. —

Spencer writes me from the City of Mexico that he will go to the Pacific coast! Wish and if possible persuade him to land to California, and collect well and send all to me, specimens, etc. to be divided as I think best. — He has a collection now on the way for me. —

This place is the headquarters of the great west, in every respect — a growing city, has now 20000 California Emigrants here now etc etc. It will be the largest inland town in the world, our commerce is immense, our progress unprecedented. Now just [illegible] 1848 Cal. made not many new things. Best good operations of all kinds, the success of which I wished for the 2d time (in [illegible] Agassiz & some other Museum &c)

I retain the bundles now set aside &c — remain in the box your new set of N. Hampshire 1848 & some seeds. I shall also include in it a set of specimens plants selected by Jordan out of my herbarium, I think you may get to assume it but doubt whether it will contain many plants of interest not sent if you are overall. — I also include a box of [illegible] for Miss [illegible].

I just learn from Short that he has received 1/2 the from C. from you — I have got the last sheets only a few days ago! Times sales are a bonanza — many newspapers of Feb. & Mar. are still back!

[illegible] pleased with it [illegible]
[illegible] for the [illegible]

[illegible] will be [illegible]
[illegible] the letter [illegible]
[illegible] will be a light task [illegible]
[illegible]

U.S. MO. 10 AUG 22 1872

Prof. Asa Gray
Cambridge
Mass.

a beautiful [illegible] is now in fine [illegible]
large specimen [illegible] also other [illegible]
[illegible] [illegible]

Ansd. May 3d

[illegible] April 17 [illegible]

My dear Doctor

[illegible] a few days ago [illegible] the [illegible] [illegible]

[illegible]

[illegible] that [illegible] them in the [illegible] Male flowers [illegible] 3 [illegible] mostly 5 stamens [illegible] not [illegible] [illegible] stamens of [illegible] [illegible] female flowers [illegible] [illegible] 2 [illegible] 3 [illegible] [illegible] stamens [illegible]

Included the Catalogue of [illegible] for [illegible] letter [illegible]

[illegible]

[illegible] first rate [illegible]

[illegible]

Mr. F. H. Hirshhoff

AUG 9 1933

Stockholm 1st May 1869

My Dear Doctor

Your letter of Sept 21st was only today, and I answer it fresh as this, because I may perhaps not find time to answer it later! We are in a state of war here. Day and night on our legs — fighting the great destroyer, the Cholera — of course no room for any thing else, not even for sleeping — & eating comfortably — like soldiers before the enemy. I like this excitement which it is for me, and feel extremely well, though too much fatigued.

I am glad to hear from you again; in such conditions though I may not be able to do much for botany. The distribution of Linth plants is of course given up for the present. Custutia — Aclop — Euphrat — still more — I shall have Cereus Roemeri in bloom in a few days — I am doing much for botany indirectly though. There are 3 expeditions now preparing to go north and west at this moment, which get their instructions etc in regard to botany from me; I wish I had more time.

1. Capt Stansbury Topog. Eng. goes to the Salt Lake for 18 months, wants a collector etc — will probably engage Fendler if he meets him, pay him, furnish — I feed him etc, and give him liberty to collect as much as he pleases for himself only require one or two complete sets, and a report

[illegible] spirity, [illegible] That scene! before opening [illegible] in an outfit. —

2. Capt Ogle, Engineer Eng. is going to run the north boundary to the Pacific — He at this moment engages a Physician from here, who promises to collect etc —

3 Dr Owen is here again with large party for Lake Superior region. —

How is it that Emory could not get any facilities while the other ~~[illegible]~~ blockade is allowed? I had a letter from him from Havana, promises to do what he can, but says he is extremely restricted. — Dr Gambel has also been here on his way to California — Kendrick is off. — This, I tell you is the headquarters of the world — and will be of the whole U States — North America the ~~world~~! what do you say to that flight? you Bostonian!

I wish you would pay several years subscription I owe for Silliman's Journal, — I ~~[illegible]~~ charge me.

I have began last year to study the oaks — the are very interesting, but not plain to one yet.

I have found that the male aments are not ebracteate, but have more or less deciduous scales. — The annual oaks have a somewhat regularly 5 parted perigon, and about 8 stamens. The biennial oaks have a 2 or 3 parted perigon of male flower — and about 4 (3—5) stamens! Nobody says anything about this, only Darlington indirectly alludes to it. — — Female perigon regularly 5 parted evidently superior or perhaps rather half superior but crowning the fruit. —

Q. coccinea is common here, red or not red in fall, with broader or more pointed lobes, [illegible] oval points. — [illegible] Quercus tinctoria — [illegible] with it, and not distinguishable or is it not here at all? — I have a tree here which I thought might be the only specimen of true Q. tinctoria here, but am now inclined to take it for a hybrid of Q. rubra & coccinea. — Shall send specimens. —

Have your young man pay attention to these things and the trees in their different stages of development. — This is the amount of my botanizing for this year — besides forestry noticed before.

You have seen that the Dons are going to permit the American steamers to pass the blockade and send by them to F. H. Westhoff Bremen any thing for Germany. See last letter. — Appraise Brown by all means, how you send. —

Come at Aindhavens as soon as possible if the Cholera leaves me life and health I shall visit Cincinnati soon.

I threw down some memoranda about trees last night for you. Cholera on the increase and weather as fine and delightful as I have ever seen it. Write again.

May 13th

Very truly yours

G. Engelmann

Mr. Wm. Saunders
Care of Mr. Ogden
Cincinnati Ohio

My respects to McDowell; in a letter received a week ago he offers to supply my deficiencies of Eastern plants — my thanks at present — I shall write, when I get more leisure — Send to the Carey He wants Texan Cyperaceae — You have all that I have — he should index them if them he wants

No Magnolia in Missouri — The only one ever seen by me west besides the southern M. grandiflora (Hickey) is one with large leaves (tripetala?) at the hot springs, Arkansas. Magnolia grandiflora about Houston Texas, not at N. Orleans. —

Aesculus glabra very common. Ah. typhina & vermontana never seen west. Ah. ~~[illegible]~~ capillina not so common as Ah. glab — but every where. Tilia americana — in different varieties here Arkansas & Texas; no other species. — (Braun has carefully studied Linden & Poplars)

Acer nigrum? common in the interior, rare here — dont know A. saccharinum or do not distinguish them. —

Acer dasycarpum — the only species in the neighborhood besides negundo — A. rubrum — seen south & west — not examined. —

Aesculus, only pallida or Ohiensis is here.

Fraxinus Caroliniana not north of Arkansas.

there common — a small tree 10-15 feet high, 2-4" thick — or shrub. —

Prunus chicasaw — dont know whether here — What I took for it, Curtis as well as Carey say is Pr. americana. I dont know then Pr. chicasaw vera! — But we have two forms 1, earlier larger flowers, broader simply crenulate leaves, larger yellowish-red fruit —

2, later smaller flowers, narrower longer crenulate leaves, smaller cherry like red fruit. The latter = pebble land, bottoms, prairies, the former

on hills etc. —

Castaneas in our neighborhood, only Quercus Galli & mollis — farther off coccinea & palustris

Cornus. I don't know well and can not make out — we have in fertile soil a white flowered or small tree, with white fruit; cornuta? aspiriolia? — farther off I have seen Serricea & paniculata — further I know not. — Those two last appear well distinguished. —

Liriodendron very common: this Indiana beautiful on the Wabash, not quite rare to 80 miles east of this never seen farther west but appears to reach the Mississippi on the hill chain on Cape Girardeau, and I believe it was in that neighborhood that I have seen it in Missouri — not in Arkansas. —

Fagus rarely in the same Condition & Quality also Liquid amber — but that is a Go common about Little rock. —

Lonicera? Arborea? never seen in Missouri only — the river Ohio, and common in the western Arkansas

Platanus common — of immense size. —

G. monospermum — only seen at Red River — small shrubby tree. —

No Pines in Missouri or Arkansas except about mouth of Arkansas

? sabiliana? yellow pine,

Quercus Phellos & aquatica not in Missouri but in Arkansas common, Q. falcata not here, but in the south part of Missouri and Arkansas. — Willows about not here

50 miles south — not Northern Cypress about 100 miles south.

St Louis May 13th 1849

My dear Doctor

Your letter & the Linnaea came to day a few hours after I had mailed a letter to you. I have wrote you about Strasburg & Fendler. Capt. S. left here this morning. — How annoying this Scheele business! — and he will no doubt continue to publish the other families. — He has made bad blunders however. — And how characteristic for these persons, who seek notoriety or a name with their "mihi" — "Linnæa Berlandieri mihi" and others.

You know how much I am engaged but I will try to make out the plants; some are mistaken in Asclepiadeae, my notes below however has also been anticipated. — I am a little less busy to day, & shall have an hour perhaps to spare, and will examine, write to you, as soon as done & send to Sullivant.

I can explain how that happened. — Dr Roemer was travelling in Texas as geologist — collected a great deal, was well acquainted with Lindheimer & obtained a set of his plants of 1845 & 1846 or at least of 46. He was in Texas all the year 1846 till April 1847, collected himself some and got more from a. —

I shall write to Roemer directly and tell him what I think of it, as he knew that we were describing those plants.

A little blame is owing me however, as it is partly my fault that we have not published — so — I must write and get those numbers of Linnaea. —

I forgot to say in my letter of yesterday that the Augusta treasure of Pers, and here to obtain

essential note from the Indians was given up by his wild grove
crade, for pay and goes this week up the Missouri across to Fort Laramie
where he intends to winter, from there in spring to Santa Fe
down to N Mexico, Chihuahua Coriguin Sonora Magdalena
California etc that at least is his plan. — If he succeed
he will carry botanical riches to Paris. You should
make arrangements to obtain specimens if possible —

Soon more

Very truly yours

G Engelmann

Dr Asa Gray
Cambridge
Mass

I just peep in Hook. Journal, received through [illegible] Linum [illegible] of Dr. Austin Flint. I first examined Lindheimer's Herb, which is [illegible] and found Linum rigidum from Houston & the Brazos [illegible] Shipley. I then examined my specimens from here and find the same! Have we Linum rigidum without it!! What does Lindheimer consider Linum rigidum were ??— A specimen of Linum rigidum in Nuttall's collect. 1839 from the upper Missouri has no stipular glands but is not really L. lewisii. Fendler's only specimen from the western Territories must be in his own collection sent to you. By the way the Prof. has destroyed Fendler's own collection except the plants sent to me — good hands or in their only & rigid.

But the linum species are by no means clear to me — I think I have one or two new forms from Texas one of which I have long since named L. appendiculatum; leaves opposite broadly lanceolate; grows on wet places; capsule smaller than in L. virginianum. Have the same from Louisiana.

St Louis Aug 6th 1849

My dear Doctor

Long ago I wrote the above lines, — long ago (June 1st) I received your last letter (23 March). Since that period I have passed through a fearful time, as you know — It is like a dream to me — and I am astonished how I could go through that immense bodily and mental labor & excitement so well. Hardly a day during that period, but a book or [illegible] meal, or ~~[illegible]~~ a night that I slept 5 or 6 hours in succession — But in my exertions I believe I have been successful or to speak more correctly as successful as the case, my opinion never failed — and all did not follow those foolish sanitary regulations prescribed by authority for our citizens (meat, flour, rice) but ate vegetables fruit and every thing I had eaten at other times, ~~and~~ only moderately — though moderately at that time was sometimes more than ordinarily on account of the great labor performed. — My family & household did the same, & all remained well. —

To finish with the subject I will only add — as remark that careful observation, made with the eye of a naturalist which unfortunately a great many physicians don't have — has showed me a remarkable change in the Cholera since its begin here. In April & May it was very different from June and again different in July & the remedies which were in the beginning almost invariably successful in May had little effect in July! — How much greater must be the difference in different climates, [illegible] etc. I have

foolish the attempt to find general specifics and key of treatment &c. —

I write you today only to let you know that I am well and hearty, and have again a little leisure for botany. What do about Hooker's Cusuta? I can not think to begin before winter. Shall I retain them till then?

Gregg has sent a box with a few fine cactus, & many fine plants, and much rubbish also — paid 26 dollars for it. Now I propose to send you as complete a set as possible (many malvaceae and compositae — few Asclepiadeae few Cusutae, few Euphorbiae) — you to pay for part of expense — Send to Lowell a set for $10. a hundred — and send a set to Hooker. — Many specimens are single only & smaller number are in 4 or 6. —

My last botanical work labor was to finish Lowell's set of Lindheimer's plants, & send to you to compare numbers etc — I prefer now to wait you go on in describing Lindheimer's plants — time enough to compare and correct numbers afterward. I shall ~~paint~~ distribute Gregg's plants meantime and send them with Lindheimer's after I hear from you again.

After I read a few days ago in one of our papers that Tendler had been obliged to give up the Expedition I got yesterday a letter from him. He is back to Fort Leavenworth; was as far as Fort Kearny on the Platte — lost by foolish management of the Commanding Officer, Capt Morris, a young officer of rifles, inexperienced in Prairie and Mountain life some of his mules died, they found it impossible to go on !!! — During a violent storm the Capt instead of hurrying on as is invariably done in such localities during rain storms, was on leaving a small Creek — Tendlers Waggon was in the Ford detained for 4 or 5 minutes by a waggon before him when the rush of waters came on, overwhelmed the mules submerged the waggon, and jeopardized the life of the party. —

Tendlers Things remained under water 24 hours were taken out much damaged — had to go on without possibility of drying, and partly to be thrown away because too heavy for the remaining team, were partly spoiled — wrotten etc — and finally he had to give up his team to the commd. officer — Efforts to go along with Emigrants failed — as teams are the great — the almost unpayable desideratum there, while baggage is thrown away every where. — So he returned! —

I think the best plan will be for him to start immediately to the Mormontown on the Missouri in Iowa (Council Bluffs) and try to get this fall to the Salt Lake as he would loose a whole year if he waits till spring again, while otherwise he would loose only the fall & winter

the only thing I ask that I intend to raise 200 dollars more immediately — It is a misfortune which ~~must~~ something will come — vide Liders in the Columbia river — Fremont on the Kanzas etc

Send me soon as much money as you have for him —

Tell those things to Lowell, but without asking him for money. Explain to L also why I have not answered his letter of April last — nor sent a list of Desiderata of the New England flora. I was dead for every thing but Cholera — Even my Carli parent badly and have partly been lost. —

Out of three, not seen in flower before, I succeeded in describing the flower viz Opuntia macrorhiza & Cereus Aoenii of Texas, and Mammillaria gummifera of Chihuahua.

Airashemum Portulacca, are very interesting 3 are in flower with me, P. pleroscepala (very near Oleracea), P. macrolata in bloom and P. laevicolata which last appears to be a variety of the former — both very fine and remarkable species. —

Have you raised much from Airashemum seeds?

Airashemum is also in flower here,

I shall go at Shelle's Texas plants now.

Stansbury made Fremont a very shabby offer, which F. could not accept — as I understood from a letter of Fremont's prior to his start; and F. went with the Rifles — . Those men of Col Abert are said to be excessively selfish — like the Col himself — and nothing assist and support nothing which is not for themselves and their corps — I have heard this.

St Louis is certainly as we say here, a great city — the centre of North America if not of the world and of civilization! — We burn 1/3 of our steamboats destroy 1/10 of the wealth of the our citizens one night; kill 1/10 by Cholera — try our hand in burning again — all only to show how much we can stand without succumbing — so it appears!

But it is, as you say the great focus for the West, and to the West. And we want not only the news to Boston but also that to California!

Why don't you mention anything of those you had to say so much at first? Should you have found out some thing of his weak points? From what I know of him, I think that it is not easy to live with him intimately for a length of time. I don't know though; I may

be influenced by some of my friends having had violent scientific and personal feuds with him. This is privatissime.

Now some personals! This is the first letter (except a few short ones, to say neither or rather bulletins) written by me since May.

Yours

J. Engelmann

Prof. Asa Gray
Cambridge
Mass.

Tendley whole collection left here, has been burned — how fortunate that I sent you his Cat. Pl. Plants for Brit. Mus.

Th. Kimm leaves here tomorrow for east. He will let you know of his whereabouts in Boston, and when he leaves give him anything you have for me, even if it be much; he will take care of it; money, too, same; if there should be any

St Louis Sept 26 1849

My dear Doctor

I intended answering your letter after having sent off Lindheimer and Gregg's plants, but I find that that will take too long a time – so I send here Scheele's Texan plants, without waiting longer. You see that I have identified all of Lindheimer's plants, one or two excepted, – but Roemer's own are almost all doubtful. I have written to him for specimens.

Fendler will try some other business, thoroughly disgusted with Cousing months and years before getting in action again and dissatisfied also with the slowness of the returns. He has gone to the upper Illinois or Chicago – If he doesn't succeed he may start again for the Salt Lake. – He requests me to intercede for him with Major Cowell and Cattell. He has collected about a thousand specimens on the Prairies, which he requests them to take in part payment for the advances of $300. made to him last spring. We have induced him to start and he has not only lost his time but also money or credit, and those specimens to worth a few dollars are not so much as to your Fendler would probably be indebted by you to remit part of this money due to them. – Whatever they must have you will please deduct from Fendler's money going through your hands. –

Fendler appears to be one of those men, who will never be sedentary – rambling has become another nature to them, and he probably will not stay long where he is now, but try again rollicating. – Besides that he is, when active, an entirely trustworthy. –

A cousin of mine grown up in Illinois is studying medicine now in Germany, & was advised now after finishing his studies there to spend two or three months in an American medical school – recommending Cambridge or Philadelphia – I should like to hear your opinion about it. Which is the better practical school for a young Physician, the better opportunities? –

Oaks. I happened to examine a little this season. I have a hybrid of Q. Cerris & nigra observed in all stages – found last fall. – I believe I have put it to

you already as "No 4" — This fall I have found a beautiful hybrid of — Q. nigra & imbricaria, and one of Q. palustris & imbricaria with leaves exactly like Q. heterophylla Mich — the latter hybrid is rather doubtful to me, — could it be a variety Q. palustris? — Is there specimens of Michaux' plant still in existence? — I have seen specimens of Meade's hybrid and of Lenna. both may be between Q. imbricaria and tinctoria (coccinea) — but they differ somewhat from one another. — May we not expect hybrids between Q. tinctoria & rubra palustris etc etc — and how to find them out? — They will greatly increase the confusion and difficulty of our Oaks — Allour hybrids are among the herbaceous Oaks — any among the arborescent also? — Q. alba is a most variable tree: leaves almost entire and deeply pinnatifid — acorn globose-oval, and very long oval — sessile or long pedunculed — Q. montana & Castanea are no doubt similar varieties, at least what I take for them. Q. Prinus is unknown to me, bicolor common here and appears distinct — I want acorns of Q. tinctoria and specimens — I believe the tree dont grow here. —

I have some more Quercus and the 4th Talinum (pl. Cancrol.) in bloom — T. parviflorum has also flowered. —

Riehl will send roots etc of western plants, such as may interest you. —

I dont want to send Lindheimer's without Gregg's, Express Expenses too much — and Gregg's must be arranged a little and even somewhat examined before I can distribute them — little leisure — therefore the delay. —

Fendler's own herbarium was burnt at the great fire — that also had the effect to digust him with botany. —

Nothing from Kinan yet. —

Aronia kerrnesina is probably a Nyctagynia Choisy not Hartlaubia N. capitata (fol glab.) — It is also among Gregg's & Wislizen's. Lindheimer writes me that he has sold a set of abt 150 spec. to Conde of Cincy who was at N Braunfels etc — and has returned he may cause them to be published and may have collected some himself — like Roemer — So we must not defer any longer. I suppose you have studied the greater part of the Pitt families at least as far as in Flora.

Dr Bischoff suggests that as Cirsium in Europe, so may form Vernonia with us many hybrids — may be — I have forms which connect all our species — prealta, flexuosa, Baldwini, arkansana — But such a state of things is bewildering. — With my hybrid berberis I can also get along well enough.

Mention me to Hooker in connection with Cassiope. I shall soon get at them I hope. — Your Calliandra is from Chihuahua, Wislizen, probably. It has been lost here. — Send Linnaea, if any more of Shecle — Yours truly G. Engelmann

St. Vincent Isl.

[illegible] vegetation – C. Thomas =

[illegible]

Paradoxum Linnaeus. [illegible]

Pa. [illegible], [illegible]

Unola n. sp. [illegible] Balda.

[illegible] Lam. Gp.

[illegible] n. sp. Morobolus juncens.

Solidago [illegible] =

[illegible]

[illegible] Vincentia = Dipitopappus [illegible]

[illegible] Platanta = [illegible]

Phoenix [illegible] Paralda.

[illegible] Pöckeliana [illegible]

[illegible]

Karina [illegible]

[illegible]

Heraclum auditum – [illegible]

in Amer. [illegible]

Vernonia eminand. Bitch. [illegible]

[illegible]

St Louis Octob 26 1849

My dear Doctor

Both your letters of Octob 1st & 13th are before me. Mr Lowell shows himself as a generous man, who knows to appreciate the troubles of a poor naturalist. But you don't say whether I shall send on Fendlers Prairie collection? — I think I will get Fendler to select a very full set, and send it along with Gregg's, and those oaks of mine.

I am distributing now Greggs plants and am almost done with them. You get an almost full set, Lowell nearly as many; Hooker about half as many, Torrey hardly 1/4 and Braun and Short each about 1/10 or more. — You will find many fine things, — pity that the specimens are often so poor. — To day I handled the Nyctaginaceae, which contains 15 or 18 species — among them if I am not much mistaken some new genera, also the rare Tinnantia, which had also been collected by Wislizeni. N.B. W. has collected — this Mexico a beautiful and new Tripterocalyx, which may be named major — being larger — all parts, fruit, about 1 inch long etc — A new Chenopodium near Botrys, with the habit of Cycloloma dentata; an Euphorbia with naked leafless lignescing stems. — Two species of a new genus I think, near Navarretia and Gilia, but with only 3 ovules — A blue and a yellow Nyctaginea distinct from Cabutia. — Sida "physaloides" always black also for Stellaria

Lindheimer appears not to have done much this season. He send occasionally fragments of plants in letters — among them this summer Hymenatherum pentachaetum, and your new Chrysactinia!

Some time ago I got the package of books and plants. Many thanks. Flaveria chloraefolia is very distinct — I shall return it to you after having made a drawing of it. — I am delighted with the Genera — Melvaceae especially — but with all. — Engravings or perhaps rather impressions are however not all quite as good as in first part, at least in my copy. — If your Pavonia is Lindheimers plant, it dont agree quite well Lindheimers flowers are much larger — etc — L. has also sent lately an Anoda which may be your hastata — flowers much smaller — Whether distinct from the Brazilian plant? There is no fruit in the fragment. I shall send it, as also a fragment of a shrub "folia opposita, semi virgata, baccae rubrae" — What can it be? — Lindheimer asks what the Cucurbitacea is which is frequently cultivated in Texas, yellow flowers fruit 4–5 inches in diameter, 1½–2 feet long, inside with tough cellular tissue, used for hats etc — seed large oval, black.

may not what you doubtfully name Artemisia cana in Wisl. Plants, be an Eurotia?

Among Gregg's Plants is a Reseda from Mexico near Saltiola but distinguished by black shining small seed — I can not find any European Reseda of that description. — You will also find an Oenezia, which may be your O. nana, but caulescent. — But it is useless to talk now about those things — you will soon see them. — Gregg writes from Mazatlan, that he has sent another Collection by ship from there. —

My plans are now, as regards Botany — to finish distributing of Gregg's plants, send you Lowell's set of Lindheimer, which is ready packed, and yours and Lowell's of Gregg and Fendler — Then finish distributing Lindheimer — then go at Asclepiadeae, Cactaceae, Euphorbiaceae — that is all I believe, what I can do for Plant Lists. — and then go at Cucurbitaceae and not cease till I finish them. The thought of them is like an incubus on me — and I am almost astonished that I have not yet dreamed of a Cucurbita coiling itself round my limbs, etc. etc. —

Fendler is here. I don't think that he is doing well. But I don't speak to him of going out still less urge it on him. — I think though he will go. And Lowell's generosity will not fail to have a favorable influence on him. —

Lindheimer's plants are all finally arranged and numbered — and nobody gets them with his original numbers than you — therefore no numbers in brackets, as is the case in Fendler's. You will find all the numbers complete in Lowell's set — And as you have no tickets I shall send you a number of blanks.

One of my hybrid oaks puzzles me much — I have collected it with good fruit now, and find that so different from both palustris and imbricaria which I thought to be the parents, that I am inclined to discard the notion that it was a hybrid or a variety of palustris; and almost think it a distinct and new species — foliage much like Q. heterophylla of Michaux plate, I have got Mead to collect his hybrid oak largely —

I am still puzzled about Q. tinctoria & coccinea — They are either identical, or the former is wanting here. I want specimens of tinctoria and fruits — Q. montana and castanea can not be distinct; discolor is a good species. Prinus I don't know. — Macrocarpa and lyrata may never be identical. — I find the acorn of Macrocarpa (the heaviest weighing one ounce) included in the cup entirely or mostly 3/4 but sometimes hardly 1/2 — cup fringed or fringeless —

Redness of leaves — fall — different — different seasons — different — different specimens of the same species — Here most beautiful from the 20–30 October — most gorgeous — Acer glabr — Quercus alba — (where it has a deep purple tinge) Sassafras dup yellows or quite red — Q. nigra and coccinea off beautifully red — Q. rubra less so — Q. castanea, macrocarpa, imbricaria never — palustris sometimes as bright red as any — Q. obtusiloba has the remarkable property of having now already the leaves perfectly dry and withered — which state they remain on the trees through winter. — If these things would be observed for some years carefully they might form the object of an interesting paper. —

Nichol prepares plants for your garden. — With them I will send you roots of Ulmus parviflora, raised from Fendler's seed and T. aurantiacum" from Lindheimer. L. has sent a fifth species which you must have among the dried plants — large, tall, several feet high, with loose axillary panicles if I recollect right and small flowers. — "Tal. sarmentosum" — T. calycinum has sometimes 6–10 petals! — By the way, I will do the Portulaceae of Lindheimer's Plants.

I think we should in the context name only the distributed plants and in notes the others especially the rare or new ones not distributed — Or they might be introduced in the context without numbers, but perhaps with a mark + — The numbers are as I have told you already definite.

The Portulacca "near oleracea" of Lowell is most probably my retusa (also one called pteroscpala) — it is easily distinguished by the more cuneate retuse leaves, much broader ovate carinate sepals and much larger and rougher seeds. — I shall send seeds, as also of the interesting "versicolor" or "Convolute", with its original — assimulated seed vessel

Yours very truly

J. Engelmann

My best respects to Agassiz — I have seen his pin: Decow a day or two ago — shall soon write to him.

Open carefully

Prof A Gray
Cambridge
Mass

OCT 10

I have a favor to ask of you. Sept 2d I sent a letter to my brother: inclose Thinking that a complete postal arrangement was established with England, I did not prepay and now learn that under the circumstances it may still lay in the Boston post office. — If I knew it I would at once send 30 cents to the post master there; but I can not learn at our post office what to do. — Could you spare 10 minutes to address ten lines to the P. M. Boston? and pay what is necessary for me? — The letter is of importance to me.

"Via Boston & Liverpool Steamer,"
Julius Engelmann
Frankfurt on
Germany

Chretia has orange-colour[illegible] corolla on the size of a pea, [illegible] (Lindheimer)

Brownsville Nov 1st 1849

My dear Doctor

I had just sealed off the box when I received your letter of Oct 30 [illegible] Calycoseris 412 and Chlorogalum Pomeridianum near Victoria — the only specimen from inflorescence, [illegible] hardly [illegible] that. Of the half open flowers I send you one with a note.

Lithospermum [illegible] I have examined [illegible] and find it a [illegible] species. We have made two [illegible] in the Western part. But I have two new Indian [illegible] besides the one you mention, which has yellow and very pretty large flowers, and one with white flowers near Victoria. — I see with pleasure that you in general have also the style of Oenothera very short — it is however not always so short, but I find it always shorter than stigmata — in "O. rotiesa" it is as long or longer etc. you will see my notes — You will find seeds of a C ~~[illegible]~~ in the box [illegible] ground they form large bushes, and flowered abundantly [illegible] become naturalized in Uncle's garden. You will also find specimens in the box. —

Linum Berlandieri № 581. "on stony dry Prairies near Brownsville" in M. (№ 22 was collected on the sandy coast of Galveston 1843) it shows traces of stipular glands; a tropical species. 461 (1845) is quite rough from the persistent glands — (the same or another species?)

Talinum amantiacum n. sp. № 579 shall send you a sort of this as well as of T. parviflorum. — Talinum sarmentosum n. sp. № 580, I have not seen living.

T. alone mentioned Linum 461 is from sandy prairies on the Guadalupe.

NB. The settlers on the Llano have had to leave farms, harvest even cattle in a retreat before the Comanches. — Not El Paso! the Indians are also very bad, have driven back the Dragoons etc. Any time from Wright?

I shall go now at distribution of M. Lindh. and hope soon to do with it — Shall send you then a set for Harvey — [illegible]

Vitis mustrina is M. Lindh. 358. — 359. V. aestivalis var. 357. Hermannia. — You will find it so in M. Lindh. for Lowell. — But I notice, I have rearranged some numbers, probably after sending off your set some years ago — you must therefore rely on Lowell's set — as to numbers — Have I copied for you Lindheimer's labels? — I find in my list "35 8 Vit. populifolia" [illegible]

Kimm says press of business made him neglect to collect the bill, but that he has now written to N York for it.

We have had no frost yet this fall — unusually mild weather.

The box contains 1, N. Linth. for Lowell.
2. N. Gregg. for same
3. do for you
4 N. Fendler. 1849 for you
5 — — — for Lowell
6 A few plants from me for you
7. 40 do — Lowell

Some seeds and especially Acorns for you, and a few for ~~Lowell~~ Hooker, which please send soon, so that they may germinate in time. —

2 Cottes with 2 Crataegi, the only I could get as the boys take care to destroy every thing of the kind for about here. — I am under the impression that we have only a Crataegus Crus galli with 5 seeds — Cr. mollis I wanted to send but could not get; fruit is very large. —

Besides Cornus florida we have here this arborescent Cornus, which I send — (sericea ?) and some distance from me C. paniculata & sericea; — I am not well pleased with this genus, and can not make out the species well

My expenses on Gregg Plants are a little over 30 Collars which I should like to make out of Lowell and have sent him therefore a very complete set of 388 specimens; but if you think, that it was better to present it to him, I am agreed — in that case however I would have selected a smaller set for him and a larger one to Hooker & Torrey, who get comparatively small sets now, of 150 or 200 plants.

You must look through Lowell's set and compare it with yours; you will find some plants in his which are not in yours; they are such which I thought you had already (from Gregg formerly collected) or which might not be interesting to you as common. — But if you want any of them, you are welcome to take them. —

Fendler presents Mr Lowell through you his best acknowledgments for his liberality: — — I think he gets sick of city life and will go out again next Spring — No remittances for him yet? — — — Could he calculate on further annual stipends for a year or two if he should go again? —

Also for Mattell

I forgot to say that the Box not being quite full I have put in it also a package for Prof Torrey, which you please to send whenever convenient.

Malvarea 412

Usually on the lower Guadalupe margin of thickets on the Divide; just beginning to bloom; Febr. 1845

A perennial, or apparently semi-prostrate plant, with several prostrate or ascending stems about a foot long; slightly branching — flowers axillary, single, — pedicells longer than petiole shorter than leaf about 8 lines long; calyx about 9 lines long, with 3 linear bracts, flower rose colour, apparently about 2 inches in diameter. — This is the appearance of plant in early spring.

The most advanced flower I have opening I send it inclosed as also another bud.

It most probably belongs to Malvaceae, and must be either a Sphaeralcea, which I dont think or Meliphaea of which I know nothing but the name, or some new genus.

Calyx stipellate with 3 setaceous bractlets

Petals in the usual way with the staminal column

A case willows — ciliate; stellate — pubescent, — spatulate; Nat. nat. column numerous phalanges, but apparently not regularly as in Sidalcea, but filaments not arising from top of staminal column all separately; column without an naked 5 toothed apex.

Styles ~~divided~~ 17 – 18 clavate, united below, stigmas terminal, truncate but hardly capitate very tomentose, apparently 5 angled or rather 5 – ribbed much like it is in Sphaeralcea; — but closer examination which however I would not carry far, for fear of destroying the best specimen I have, and which I send you herein appears to show, that there are as many carpells as style and that 2 or 3 ovules are found in each carpell.

If your drawings of the stigmas of Malvaceae are correct then this differs from all yours by the clavate styles, and not exactly capitate rather truncate stigmata; and that may possibly indicate other differences in the fruit. —

I shall soon write again.

Very truly
Your
C. Bolander

over

11th

This letter has been delayed — It gives me an opportunity of telling you not to make any further enquiries about Fendler's property in attempting money — He told me just now, he intended or thought of going to Salt Lake to settle there. — He is full of project & schemes, and I don't want to influence him. — He may yet go to the Salt Lake — But we give him, that he should get the money for his plants sent from here last April a year. My German Corresp. have not paid neither — revolutions — wars!

Mr Asa Gray
Cambridge
Mass.
Paid 10 cts

I repeat what I have said in my last letter, that I is superfluous to give any other names, than those used in Torrell. Labels (and all other labels). — Lindheimer's private numbers were only the understanding between you him and me — the plant may be mentioned in the text, but without numbers, or in notes, where we may also tell some note, about Gregg's new plants if you choose and other.

effusa is a name which I had also given to that remarkable species (Kearlia), which however is 629 and not as you have it 628; that Bro is ~~Brachycome~~ Kearlia bellidifol = 415.

Dear Doctor

I have just examined your account with me and find it perfectly correct, except your omission in the amounts due to Fendler to mention the sum of $10 allowed by you & Lowell for seeds, and included in the check for $78.00 sent July 13 1848. These $78.00 were made up for Olney $42.20 Gray & Torrey 26 and seeds $10. = 78.20 — On the other hand you have omitted to charge me with the subscription to Sillimans, which you had undertaken to settle for me. — That amount I believe to $10 and will balance our accounts.

I find that Fendler has received in cash already $850 for his Santa Fe collections is sure of 250 more; and has more unsold sets on hand (with you, in England, Germany and here) valued by him at over $400, but which may bring perhaps 200 yet — making the whole proceeds of one years campaign — for him and assistant $1100 with the prospect of 200 more. This is encouraging enough. The difficulty consists in the slowness of the returns. —

The distribution of Pl. Lindh. — 40 sets was finished to eight (16th) 450 in the last sets, 315 in the last. — Some of the rarer plants are twice in the sets — a very few common plants mixed with the many new and rare. — A good deal of time and labor will it yet require to put out in proper paper these 15000 specimens and pack them!

Papers mention a Dr Berlandier in Matamoras. Is that the Collector?

This is the remnant of carpel of Lindheimera (Sieda) somewhat different from your drawing — lobes of pistillum, calyx also much narrower and longer. Was united at base.

Phila: Dec 17th 49

My dear Doctor

The above I commenced a month ago. Since that I have received your letter of Nov 7th. I would have written sooner but I was so engaged with packing plants — an never ending mechanical business, which never the less I could not well let any one else do — so that I did not get off Schedule plants. I send here Portulaceae; shall soon send Cactaceae in a couple of days, and two boxes, one for you, one also for Hooker — with Pl. Lindh. — Shall then write again. I also send a box of plants from Riehl to which I have added — 2 Falinias (parvifl. & nanant) and 3 Bolvaneas & Echeveria from Sellow. — Riehl plants are not much, I think. If you would make out a list of such of our plants as you desire, he could get them next season. He desires no return for the present. C. L. should like to obtain a Catalogue, if your Garden has any

[illegible] the smaller box in [illegible] plant for Crawford & Green
[illegible] E. J. R., & the larger one [illegible] for [illegible]
[illegible] Harvey and also [illegible] for J. Carey
but I don't know whether Carey will continue it
— Olney is I believe none, but may become
more about these boxes when I have sent them.
[illegible]

[illegible] have got [illegible]
[illegible]
so well.

[illegible] of Oregon plants [illegible]
[illegible]

[illegible]

My letter [illegible] Thanks [illegible]
[illegible]

[illegible] Schaele [illegible]
[illegible]

[illegible] If so let me [illegible]

Yours [illegible]
[illegible] sincerely [illegible]

Paris Dec 21st 1849

My dear Doctor

a few hours after sending off my last letter (with Orthocaeae) I received yours of Dec 6. — Yesterday I have sent off 3 boxes, the contents of which are noted on the included paper.

I don't know whether after several years now the subscribers remain the same, and I don't consider any one obliged to take the set directed to him; it is partly my fault that such a long time has elapsed. —

I find that Olney, who took ~~Lindheimer~~ Rendle's plants, is not a subscriber to Lindheimer, but he may become so.

You find that the value of the sets does not decrease with the advance of numbers; I have taken the trouble to address to every subscriber the same number he had of the first distribution of 1843 & 44 plants, but to give to our new subscribers fuller sets, and if possible such plants, as were wanting in their old sets; and I have kept a complete Catalogue of every set.

Prof. Harvey having taken Oakes' set of N Mexican plants I have directed to him the set of Texas-plants originally destined for Oakes, No 26, one of the best sets. — If he should be still in Boston, when the boxes reach you, you may take out his set from the Box No 1. and hand it over to him. —

Mr J. Carey was a subscriber and received set No 19 of Fasc. I & II. No 19 has been packed with the english sets in Box No 1. and I don't know, whether Mr Carey does still consider himself as a subscriber; if so the set, one of the best, can easily be got out and sent to him, or given to Olney, or disposed of as you think best.

In your box I send 31. 32. 33. 34. 35 ~~without~~ which are not subscribed for as yet; I retain here 36. 37. 38. 39. & 40 also with 315 plants. — To England I send No 22, which has no owner yet;

To Germany I shall send shortly 23, 24. & 25 not subscribed for yet — all others I believe are or will immediately be taken.

That is, what I have to say about the plants. Will you send the box direct to Hooker, and trouble him with it? — It would be well if you could do it.

Now to your letter.

Senecio Roemeriana Scheele. You may be right — I have kept no copy of Scheele's description, and can not compare again. Against Lindheimer's custom he has never indicated the colour of the flowers. From my specimens they would appear whitish or very pale yellow. — 605 is the print of the same.—

The names on the labels „Oenothera serrulata var pinifolia" etc are from me, unless Lindheimer's name is expressly attached to it — but they were mostly given without close examination, and I attach not the least value to them.

Amorpha Roemeriana Scheele is most probably 595.

That the box would come higher than 5 or 6 dollars I never imagined. It is too bad. — We have to put up for a few years more with this impossible till communications are better arranged.

Send me your MS of N. Lindh by all means, by mail, I don't mind the postage — should like to see it, and may be able from having seen the large number of Lindheimer's plants, and from his notes to add something here or there.

I must also write an introduction — c.Ga. & the country localities etc.

I will have to give you also all the former numbers again beginning in fasc III & IV, for example 13 Bouvardia Candelabra and others, which we shall have to notice for the owners of the new sets which contain these plants, distributed only in a few of the first collections before.

We should also make the necessary corrections of our former Catalogues, if any.

Did you look at my oaks? What do you make of them? Those hybrids? are somewhat puzzling and because it is almost impossible with certainty to determine the parents, it is well enough to give them other names than those indicating the parentage.

Q. imbricaria — nigra appears distinct enough — but I find not Q. nigra in the neighborhood, though plenty of Q. coccinea. — That must be a hybrid no doubt — but the two others: may Q. quadrangulaba not be a var. of Q. nigra, and Q. macrinata a peculiar species?

Do as you think best about Lowell's set of N. Gregg. You appear to think it best to present them to him — well and good. — N. is not the money which I look at in this case, but that it is disagreeable to me that I should not have given one of the best sets of Greggs plants to Torrey or Hooker or some one who would make a better use of it than Lowell can.

I really don't know how I stand with Lowell. I shall look in my books, which are kept a little irregularly.

Don't the Smithsonian want a good set of N. Lindh.?

Remit the $20 for N. Lindh. together with what you will get for N. Lindh.

All right about receipt of Sillim. Journ. — I will get of N. Geyer.

By the way how do I stand with Riley & Curtis about those Geyers plants? Has he ever accounted to you about those he said?

How does this letter of Neuchenbach fol. come to your hands? I have hardly time to prepare plants for exchange as he wants.

What do you say about Q. coccinea & tinctoria? You will find some remarkable acorns in Box No 2 of depressed as well as oblong shape, all no doubt Q. coccinea.

Yours very truly

G. Engelmann

Please send me Agassiz's Embryology printed in Boston lately and charge the same.

Sold for 25c

Wm A. Gray
Cambridge
Mass.

Fascicle III. 1845 & 1846.

NB. The numbers behind the name refer to Lindheimers Catalogue; the underlined ones to 1845 the others to 1846

319 √ Clematis Drum 318.
320 √ [illegible] 2
321 Delphinium 1. 317.
322 Berberis [illegible] 3. 292.
323 √ Streptanthus ? 5.
324 √ Erys. arkans. 4. 306
325 Vesicaria "umbellata" 7. 13.
326 √ V. 7
327 √ V. 305
328 √ V. 301. 302
329 √ V. 304
330 √ V. "recurvata" 8. 11. 12.
331 √ V gracilis 10. 299
332 Polanisia 231. 421. 420
333 √ Polygala 337. 500
334 √ Ionidium 82
335 Paronychia "Lindheimeri" 233. 477
336 Stellaria 96. 234
337 √ Linum "rupestre" 17
338 √ L. multicaule 19 is 462 the same ?
339 √ L. "Bigoides" 278
340 √ [illegible] 307. 20
341 √ Oxalis vesp. 457
342 Hallstroem. Max 250
343 √ Tribulus 94
344 Rhus copall. var. 8 243
345 Rhus copall. 9 243
346 Rh. toxic minor 245. 401
347 √ Rh "parviflora" 155
348 √ Malva pedata 410. 119
351 Pavonia "Lindheimeri" 503. 148. 242.
349 Malva 240. 413
350 M. 241.
352 Abutilon tex 415. 507. 239
353 Abut. [illegible] 504. 238
354 Sida filicaulis 506 237
355 Melochia 505. 257.
356 414. 258
357 √ Vitis "glaucifolia" 323. 21
358 √ V. aestiv. [illegible] ? 493. 98
359 Negundo aceroides var. 511. 23. 252
360 √ Delphinia 391
361 √ Aesculus Pavia var flav 24
362 Vagnadia 156. 253
363 (Rhus virens Lindh.) 248 123. 514 (144)
364 Celastrus 229. 407
365 Rhamn. tex. 405. 158.
366 Zolichus 31. 263
367 Galactia 265
368 9 264
369 9. 266. 479.
370 Cassia macrotaeniata 261. 498

371 Psoralea cuspid 340. 29

372 √ P. floriß 342. 157.

373 Eysenhardtia 499. 402. 268

374 Dalea Lexif 341. 267

375 D. 496

376 Cercis "reniformis" 366. 27. 276

377 Sophora affinis 365. 275. 26.

378 √ S. "sericea" 332. 25

379 Cassia "mollis" 508. 260

380 C. "Vespulicis" 338. 509. 259

381 Algarobia in flower 262. 333

382 Mim. ? (no flowers!) 497. 169. 269.

383 [illegible] 33: (= 270 ?)

384 272

385 Desmanthus Barbyl 149. 271.

386 [illegible] 32.

387 Gymnos "microphylla" 46.

388 P. "Tawakonia" 154. 274. 316

389 [illegible] 337

390 Denotth missouri. 271. 255. 41

391 √ O. trifoliata 36

392 √ O. serrulata var 38

393 O. serr. var "pinifolia" 37. 45.

394 Ludwigia natans 151. 339

As soon as I have finished this Catalogue I shall send you a copy, for you to alter or correct — so for example I do not know whether the place assigned to 363 is right, etc.

I shall be able to make 40 sets, and shall distribute as species where I have not at least 10 specimens to spare but it will be much better than last collection, and the last is number, will get much more in proportion.

My intention is to distribute now even more common plants, as there are so many rare or new ones amongst them, so that Lindheimer will not loose too much. — Do you think any thing could be made by collecting & distributing woods, as those sent you in the box?

If in my list (as above) I throw different plants together, you will also correct me.

Continuation of the Catalogue of Lindheimer's plants, coll. 1845 & 1846, as prepared for the subscribers. Numbers behind the name are those of Mr. Shumard's Catalogue. Those underscored are of 1845, the other of 1846.

319 to 394 have been sent in my last letter. —

395 Menzelia 518 (273. 142)
396 ✓Sicyos angulatus 289
397 (Bal[illegible]) 159. 359.
398 ✓Cucumis perennis 160. 273
399 Cucurbita 472. 360.
400 Lagenaria 474. 361.
401 Cereus pectinatus 281. 45.
402 Eryngium Leavenw. 343 (510. 266)
403 He[illegible] 327. 363.
404 ✓Ptilima americana 43.
405 ✓Visnaga 523. 100.
406 ✓Ammi 66.
407 Vernonia Lindheim. 353
408 Clavigera Ridd. 438. 191.
409. Mehnia cup. var. 521 & no nro.
410 M. cup. var. 433. 199.
411. Brickellia cylindr. 439.
412 Eupatorium agratifolium 205
413. Aphanostemm. ramos. 356. 435. 63
414. Kuerlia bellidifol. 360. 61.
415 Gymnosperm. corymb. 440. 195.
416. Solidago 194
417 Grindelia lanceolata 196.
418. Chrysopsis canescens 350
419 Pluchea 198
420 Filaginopsis multicaulis 103
421. 200.
422. Berlandiera texana 161. 192.
423 Lindheimera texana 52.
424 Engelmannia pinn. 346. 51.
425 Parthenium Hysterophor. 430. 54.
426 Iva 207.
427 Ambrosia aptera 204.
428. A. coronopif. var aspera fl. minor. 205
429. A. coron. var. gracilis 206
430 Tetragonotheca texana 48.
431. Gymnopsis uniserialis 352. 197.
432 (Barnattia calva 490. 432. 142.
433. Viguiera 203
434 Bidens 193
435. Lipochaeta tex. 345. 142. b.
436. Agassizia suavis 351. 59.
437. Hymenopappus corymb. 60
438. Arbinellia scaposa 358. 55
439 Ambrosia [illegible] 208

440 Artemisia [illegible] 471
441. A. ludovic. fl. supra tomentosis 211.
442. A. lud. fl. supra, sub. 210
443. A. – 209.
444. Senecio Balsam. 49
445. Lacinia nudans 57
446. Apogon hirsutus var. 50
447. Pinnapapp. roseus varall. 359. 62.
448. Lobelia tex. 342
449. Specularia no Nro 65.
450 ✓Diospyros ♂ 126.
451 ✓D. ♀ 126.
452 ✓D. : fruit 270. 126.
453 (Bolivania 218. 383. b
454 ✓B. " var. minor 383. a
455 Alepicus 348.
456 Arenaria viridifol. 343.
457. A. puncicul. 272. 345.
NB. these sent you this before, from Houston, not this year, the other (none) Arenaria, nearly related to this, is only in a few specimens
458. 349. 190.
459. 352
460 474. c. 350.
461 Spigelia 172. 367.
462. Erythraea texanis 102. 180. 340.
463. E. Beyrichii 308 (341)
464 ✓Gilia rigidula 279. 144
465 ✓G. incisa 291. 519. 214
466. Phlox. 428. 429. 68.
467. Ph. 424
468. Convolv. 274. 170. 319.
469. C. 484. 275. 104.
470 ✓Evolv.? 276. 486. 522. 69
471 Cuscuta gamostyla 316.
472 ✓C. verrucosa var. 277. 152. b
473 ✓C. pophyrostigma hispidula 152. a & no nro
474 C. poph var. 317.
475. rhodolacea – 171. 219.
476. ✓Echinospermum. 70.
477. Eutoca tanacetifol. 423. 71.
478. Phacelia 294. 295. 309.
479. Androcem 494. 150
480. Solanum 322. 312.

481. Capsicum 495. 321. 314.
482 ✓Nicotiana 320. 72.
483. 408. 74. 174. 315.
484. Macromeria [illegible]
485. Hyperticum chamaedryo. 381. 322
486. Buddleia 385. 476
487. Castilleja pinp. 329. 75.
488. Orobanche unif. 330
489. (375) 376. (377) 83
490 ✓ 378
491. ✓Scutellaria versic. 146
492. ✓ col. hirsut. 81.
Salvia (372 is intermediate)
493. Salvia? col. glandul. 465. 80
494. ✓ 404. 421.
495 ✓Hedeom. Drumm. var. 368. 84.
496 ✓H. ♂ 374. 85. 87.
497. ✓Monarda aristata var. 371 97.
Corolla head larger, upper lip more hairy.
498 ✓Salvia cyanea n. sp. 369. 105.
499 ✓Salv. 370. 145.
500. ✓Verbena 77.
501. ✓V. 325. 76.
502 Lantana 384. 306.
503. Diplacus lin. 111. 325.
504. D. Lindh. n. sp. 390. 501.
505. D. [illegible] n. sp. 323
506. Mirabilis 409. 470. 515. 158
507. Abronia Kermesina n. sp. 386. 178. 288.
508. Boerhavia 469.
509. 387. 140. 287.
510. Plantago aristat. var. 422
511. Ashgrantha 284.
512. Amaranth. 286
513. Celosia 520 283
514. Chenopod hybr. 280
515. Polygonum. 279.
516. Laurus Benzoin 478. 147
517. ♀ ✓122. 216.
518. Forestiera ♂ 221. 222.

519. Diplotaxis ?? 322
20 Aphora Drumm. 106.
21. Stillingia 315. 141
22. Acalypha 382. 516.
23. Tragia (urticifolia) 298.
24. Tr. (urenifolia) 299.
25. ♂ 406. 223.
26. ♀ 406. 223
27. Croton 177. 297. b. (297.a. 175. 176?)
28. Cr. 304
29 Croton elliptic. 303.
NB. if No 302 should appear distinct enough a variety there are species enough for another number
30. Euphorb. umbratilis Lindh. 89.
531. E. 90. a. b. 313.
32. E. 487. 293. (294)
533. E. empitrapa n. sp. 164. 290.
534. E. hemiar. var microphylla 291. 292.
35. E. 165.
36. Phyllanth 458. 92. 301.
537. Jaglans pubescens 480. 109
38. Condalia obovata 403. 217.
(should be 366 and all other numbers altered.)
39. Tillandsia recurv. 517.
540 Allium mutabile var. flavescens? 114.
541. Scilla esculenta 116.
542 Cooperia " no nro
543. 416. 115.
544. 269. 117
75 Juncus 153
546. J. 183.
547. Potamog. no nro from Caritas
548. ♂. 212.
549. ♀ & fruit. 212. 419.
550. (298.) 93.
551 ♂ 297. 213.
552. ♀ & fruit. 213.
553 Cyperus rupestris 182. a
554 Carex vopanica 131
555. C. 133
556. Carex 132
557. Fimbrist hispida var. squarr. 184. 185. (186.)
558. —— —— 128.
559. —— —— 463
560 Rhynchospora distinct from tenuis 127
561 Scirpus 135.
562 Schistidia 138. in fruit 398
563. S. 138. 397
564. Panicum 357.
565 P. 139
566. Paspalum 354
567. P. 137.
568. Aletheropogon 358
569. Leptochloa dactyl. 136
570. Festuca 129. 130
571 Elymus 134
572. 524
573. Manilea macropoda 394
574. Agolla 392.

To complete the number of specimens in the older sets I have the following from 1845 & 46.

13. Krameria lanceol.
25 Malvaviscus Drummond.
39. Dalea aurea
55 Oenothera speciosa
60 Jacea sinuata
80. Gutierrezia texana
135. Solanum texense 319. 173. 313.
143. Sentell. Drummondii 168.
145. Salvia azurea 310
157. Diplomeranthes nudiflorus 324
174. Euphorbia bicolor. 295
216. Draba aureifolia 6
226 Sapindus marg.
233 Algarobia glandul. in fruit
240. Jacea Drummondii
243 Tussieuia occidentalis
245 Sedum sparsiflorum.
246 Galium virgatum
259. Helianthus tenuifolius

267 Artemisia tridentata
272 Asclepias Lindh
281 Solanum mammosum 73.
284. Casilleja indivisa
286 Brazoria scutell 373. 79.
289. Verbena bipinnatifida 307.
295 Rivina portul. 282
300 Euphorb. hermiariodes 108.
301 E. arenaria
302 E. ariensana 88; 311
305 Houstonia texana
306. Aphora humilis
307. Tragia brevispicata 300.

I shall have 40 sets; all between 30 & 40 with within 160 spec.
all under 30 not less than 190 numbers.
all under 20 not less than 230 numbers
all under 10 not less than 255 numbers
Number of sets 30
" " 10
Number of spec. in 6700
" " 8500
1843 & 1844
1845 & 1846

The catalogue will stand as it is from No 319 to 347. Then comes

348 (formerly 363) Linth. 514 123. 248.
349. = 348 Melon pedata
350 – 349 (413 & 240 Linth) etc.
361 Gelsemium (formerly 360) etc } and so forth always one more of
363 Viburnum (formerly 362 } before
364 Ceanothus 407. 229 } as before
365 Rhamn. texensis
366 Condalia (formerly 538) 217. 403
367 Dolichos? (31. 263. Linth) etc
401 Lagerstria etc and so forth one number advanced
408 Vernonia Lindheimeri
449 Lobelia texensis
472 Cuscuta gronovii
494 = ~~Linth 404 121~~ (= formerly 493.) – 80. 465 Linth
495 Hedeoma drumm. var. and from here to 501 Verbena (325. 76.)
the same numbers as before. – then
502 (formerly 494) 404. 121 – Linth.
503. Cuscuta and from here till 517. Laurus Benzoin always one
~~516~~ ahead, then
518. (formerly 520) Aphora Drummond
519. Stillingia
520. Acalypha
521 Tragia (298) etc.
528 Euphorbia cumbratilis
531 E. rupifraga
535 Juglans pubescens and then
536 Garrya (517 formerly)
537. Forestiera (518 formerly)
538. Cintolepis (519 formerly)
539 Tillandsia recurvata as before and so to the end.
574 Azolla caroliniana?

All the alterations are produced by the change of place of –

363 Rhus to 348
538 Condalia to 366
494 to 502

517. Garrya to 536
518 Forestiera to 537
519 Cintolepis to 538

I shall distribute the plants now under these numbers and send them on.

A. Gray

[illegible] troublesome chapter! [illegible] not very easily kept, so I have to look over all the old letters etc to find out. I believe I have stated our accounts correctly in one or two former letters. In your official [illegible] $4.78 two items, which you have [illegible] in [illegible] your letter of July 13. 1848 you remit $4.78. C. Clary 42.20 [illegible] originally addressed to Clary 26, and "for seeds from Seth Pease for Garden" $10.— The last item you omit in your settlement of [illegible] May you remit $62.60: Butts Mass. 32.20. W W Taylor 28.20 Gordon to Lowell 8.10* J. to Gray 2.70. = 71.20 Mem. Aug 9 $7.00 overpaid by Cash on Hause $1.60 = 8.60 = 62.60. — Thus you omit [illegible] 10.80 [illegible] $1.60 [illegible] 2.70 [illegible] 9.20. [illegible] make you my debtor to the amount of $19.20. —

* March 24. 1849 you write: "Money for [illegible] received and forwarded" — so [illegible] paid.

To [illegible] at the time paid these 2 [illegible] final settlement of Cash [illegible] as claims against you, but stated correctly the gross amount paid by you. —

Never got Agassiz Embryology — [illegible] not [illegible] some letters of A. Gray since [illegible]

Scheele's Plantae Texanae

Linnaea vol VI

Diospyros texana = Pl. Lindh. 451–453

Celtis texana no doubt 330 Coll. 1846 but – folia not opposita etc. !

Celosia texana must be Pl. Lindh. 514. – C. paniculata Lin. Scheele mentions stipulae !! – Lindheimer's locality is N. Braunfels in rich bottom-woods.

Alternanthera villiflora = 512. = A. sessilis var.

Eriogonum Lindheimerianum 516

E. texanum 684 and especially No. 278 (Coll. 1846)

Euphorbia Roemeriana 528

E. longicornis 529

E. flexicaulis 532 = E. hermannioides var.

E. nipidola 531

E. villifera 530

Oenothera Roemeriana must be 392, though the description does not well agree.

Engelmannia texana 425 appendages of involucre sometimes larger

Ambrosia trifida texana 428 } A. apiera

A. Lindheimeriana 429 } A. coronopifolia

A. glandulosa 430 }

Helianthus Lindheimerianus 97 (N. Braunfels 1846)

This is one of the many instances of the want of accuracy of Scheele. None of the specimens have a root – nevertheless S. says: perennis and if the root could have been there, it would have proved it to be annual – !! – Lindheimer's labels are almost always copied –

Now probably wrong in numbering this, which should be 96. The remarks follow.

word for word and go a great way to prove the identity of Scheele's plant, often better than his description!

Helianthella Celifolia 434
Gaillardia simplex 437
G. Roemeriana 439
Artemisia cuneifolia 442
A. Ludhemeriana 444
Filago sessiles can it be 632 ??
F. texana " " " 633 ??
Floximum Roemerianum 448
Tetragonosperma lyratifol. 431
Cedania polystachya 564
Panicum giganteum 353 (coll. 1846)
Paspalum sericeum 566
Stipa ciliata 561
Aristida acquiramea 562
A. Roemeriana 563
Eragrostis pilifera 355 (coll. 1846)
Carex scaberrima 556
C. Roemeriana 555
C. tetrastachya 554
Juncus Roemerianus 85. Coll. 1843.
not J. maritimus ?
Iris Cachystachya could that possibly be Eustylis or Nemastylis ??
It could be the fault of Scheele's misrepresentation but I think not impossible?
Gaillardia tuberculata. I can not identify
Galiorrezia Ludhemeriana = 422 no doubt though description very inaccurate

Illinois Jan 23d 1850

My dear Sir

A happy new Year to you! late enough! you will have waited for letters from me some time; that including Portulacaceae you must have had about New Year. NB. I find that Fendler collected "Portulaca oleracea" but the only specimen is in his own collection: could it be "P. retusa? — I shall enquire of Lindh whether the true P. oleracea grows with P. retusa. —

Your letter, including the long list of Mr. Lindh came about New Year just at a time when I had to lay aside every thing else and work at accounts, bills and other financial matter. This letter is the first thing I have touched since New Year other than such to me very disagreeable and even disgusting things, which however are necessary. — I am also more busy in the practice of medicine than usual at this season, and people begin to talk again of cholera!!?? — In examining my books I have found the errors in your calculations, and accounts with me stated on the other side. — See whether I am right

Included is Scheele's List. I see that I agree well with you. Have you written to Schlechtendahl? Such impudence ought to be stopped.

Dr Roemer promises to send me all the original specimens, which had been in Scheele's hands, — I want only a few coll. by himself — Roemer makes the excuse — that those plants, having been collected 1846, he fancied they had been distributed and described long since. That falls on me! But even those that were described appear to have been unknown to Scheele; — even when he had the book, e.g. your flora DeCandolle etc. — He informs me that Cuthbert destroyed himself with Strychnin and left 150.000 florins debt, having squandered some ultimate friends etc — His splendid library was dispersed and sold for a mere song.

By the way are his „Pines" and Conifer of Jenna to be got at Boston or New York? they are mentioned by you in the last No of Silliman. — I want both. I have lately got Hooker's Sylva, fine drawing, but very few and indistinct details. —

I shall now go at once at the texan plants, and write soon again. — Your list of names was very interesting to me; but I shall have a few remarks to make.

Salvia pentstemonoides must be № 673 which I had named Lamiflora: the flowers are red and not brown.

S. amabilis is Bridgeport's. S. hirsutula and S. farinacea Benth. in DC Prod. № 152. I believe I have not sent these seeds to Berlin. I do not know how they could have got them, perhaps from Brown.

... marine that Handley No 473 with the slender cylindric pendulous heads 11 ... in ... identical with the 472 with almost globose involucres etc, but 470 & 472 are evidently ... though in 472 the involucral scales are much shorter than in 470. Senecio longilobus
428 Fendt. is evidently a large form of Hal. lanticulatus (Pl. head 4 inches diameter) ... one marked, which last one specimen is not higher the 5 inches must be H. petiolaris.
440 Fendt I forgot to send to you; it appears to be Coronidium filifolium
459 Fendt You must have got, the ones 3 specimens, one was sent to you, one I have and one is in Fendler's own collection. It is omitted in your account. It is very like Dysodia chrysanthemoides, but smaller in all its parts; pappus much shorter than corolla, and the palea not as much divided more lanceolate-oblong ~~with the~~ The lanceolate much shorter than the linear acuminate-acicular middle part of each palea. I would propose it as a second species of Dysodia, Dysodia minor Should it be a depauperate form?

I find I have not yet our account correct.

In a letter Jan 24 1849 you send a check for (Cleaveland 27 Fendler 10) 37.00
" " Febr 16 " " " " 62.60
and account for it in the following way in that letter

(copy) British Museum 32.20
W. Lister Taylor 28 20
Remittance to Fendler 60 40
Add for Gordon's plants to Torrell 8 10
" " " me 2 70
11.20

Deduct for set of Mem Acad &c. 7.00
Overpaid last remittance 160 8 60
$ 62 60 which I remit

* In your letter July 13 1848 you remit $ 78. namely
for Olney $ 42 20
Set addressed to Carey & taken by myself 26
Seeds (for Gordon) 10
78.20
these seeds are not ... among the amounts due to Fendler

In your account sent last fall you have omitted as before stated $ 10* for Fendler for seeds allowed by Torrell and you. and I now find that you account for the Mem Acad $ 7.00 but neither for the overpay of 1.60 nor the Gordon plants 10.80; I put the remittance of Febr. 16 as only $ 60.40
you have it then: remitted. Jan 24th $ 37.00
Febr. 16 60.40
97.40
off 3 Vol. acad. 7 00
$ 90.40

while it ought to be: Jan 24. 37.00
~~Febr. 16~~ ~~Jan 16~~ 62.60
Febr. 16 for Fendler 60.40
Gordon 10 80
71 20
off. Mem. Acad 7.
overpaid 160 8 60
62.60
99.60

difference $ 9.20
Fendl seeds 10.00
19.20

So I have to set from you not 10 as stated before but $ 19.20 if you find this calculation correct.

Viscum I have not examined yet. It is possible that there are two species; Lindh. says they grow on Algarobia and Ulmus, still they look very much like V. flavescens (not corrinulatum). [illegible] specimens from him in his next Collection.

[illegible] will next season collect every thing about N Bra[illegible], [illegible] sell in Europe at half price [illegible] 100 [illegible] rare plants, not yet [illegible] in the [illegible] a few [illegible] will [illegible] from [illegible] or the [illegible] set. [illegible] a few extra [illegible].

[illegible] Taylor [illegible] from [illegible] must be [illegible] before this reaches you. [illegible]

[illegible] in a little [illegible] Malvacea

I close now and hope soon to give a better account of myself

Yours as ever

J. Engelmann

[illegible] learn from [illegible] that he got from you a set of Wright's plants [illegible] of his plants [illegible] the [illegible] are [illegible] if the [illegible] I wish you could [illegible] at least a fragment. [illegible]

Mr. Ira Gates
Lawrence
Mass

331. Vesic. gracilis March 1846 in large patches on moist grassy soil (1847)
All specimens distributed are collected 1846. those of May 1845 are more slender, flexuous, longer .. but none of them is amongst the plants distributed.

330 V. n. sp. Diffuse, on high rocky table lands, New Braunfels and on the Cibolo. fl. in March, — branching from the base, subcreect or diffuse, stems from 4 to 12 inches long, radical leaves lyrate.

329 V. n. sp. diffuse, 8 to 18 inches long, pedicel of fruit horizontal, style ~~xx~~ longer than ~~xx~~ capsule — It might be called V. pedicelata petals not obcordate. — Sandy banks of green Lake near the mouth of the Guadeloupe. February. Lowest leaves similar ~~lyrate~~ sinuate

328. V. Sandy hills in the prairies about Victoria. Febr. strictly erect, or diffuse. stems 4 to 15 inches long

326 V Lowest leaves entire, sinuate or lyrate

339 Linum lyroides n. sp. branching at base, branches procumbent before flowering 1 flowered. petals apparently yellowish with red base. — 1–2 inches high On clayey soil, Aqua dulce, near the Matagorda bay, with Bolivaria, Echinoc. Lindheimeri etc. — Collected Febr. 1845.

350 flowers open only in the afternoon, — fruits bright red .. root perennial, stems ascending on to 2 feet long

359 Vitis aestivalis var climbing high on trees on shady banks of streams, bunches large; berries of the size of peas very black fl. in May, ripe in August Many sets have flowering and fruiting specimens, in others there are one flowering ones

358 Vitis populifolia Lindh. In the dry rocky bed of the Cibolo, and on rocky soil near it, also on the Pierdenales on rocky prairies, stems prostrate with erect 2 to 3 feet high branches, very rarely climbing; covering large patches, pale green leaves trembling and rustling in the wind like aspen leaves — therefore the name. — bunches of grapes 3 or 4 inches long, berries as large as peas, black ripe in September the best and sweetest kind in that region, and generally called Mountain-grape. (Lindh.) — I have found the same species on the (in Arkansas and Illinois) stony banks of streams in western Arkansas, especially on the Illinois river and its branches. — (in the Cherokee country) A specimen of the same plant is in Michaux' herbarium with Vitis riparia, and without a separate label. — Tendrils only on young and vigorous shoots. Might be called V. stans s. V. acinha

360 Negundo most of the specimens have 3 foliolate leaves, a few only also one or two pinnate ones, and in some we observe also entire, 3 lobed leaves. — All the specimens distributed are in fruit. collected on the banks of the Canale Creek in October.

342 Rhus n. sp. semperviren. — The specimens distributed are all in fruit. leaves perennial — Shrub or small tree on rocky soil in Cedar woods. fl. Aug. fr. Sept.

362 Aesculus Pavia Some of the specimens with yellow others with red flowers

Ungnadia ~~fruit~~ most of the specimens have flowers, collected before the leaves came out, in March — with full grown leaves coll in May. A few have second flowers on the leafy branches, coll in August.

old branches with ovate leaves, young vigorous shoots with roundish and even subcordate leaves — large shrub or tree, flowering several time through the year from Spring to fall — Our specimens coll in June. Distinguished by the long slender shoots with whitish bark

65 Rh. texensis in flower in April in May, some of the specimens are in flower only, others in fruit (collected in June), but most of them in flower and fruit (coll. in May)

79 [illegible] spikes at first elongated, often 6 inches long; only the lower flowers come to perfection so that the flowering spike is short globose or ovate, and the end of the spike with undeveloped buds falls off! — Wood yellowish brown, very hard; known among the settlers by the name of lignum vitae to which it bears some resemblance — from Matagorda bay to N. Braunfels, also south of the Rio Grande (Dr Gregg, Dr Wislizenus) — In the upper country the leaflets are mostly smaller narrower

16 Gymnosperma corymb. part of the specimens have lanceolate short leaves, other linear elongated leaves

St Louis Jan 30th 1850

My dear Doctor

A week ago I answered your letter of Dec 15th. I have now gone through all of Lindheimer's plants as far as Sedia and send you included the notes I have to make. — This sheet was commenced when I first began to distribute the plants 1½ years ago; some of the notes may be yet interesting and so I send it along.

In the notes you will find some plants mentioned which are not in your Catalogue. Don't forget to put them in as they are included in some of the sets, and the subscribers must have ~~till~~ the names of all.

40 spare copies we must have for the 40 sets, and some more to distribute. — The expenses of the 40 copies must be paid by me (for Lindheimer)

Lindheimer has advertised me of his having sent off his coll of 1849, very large he says. — Since then several boats from N Orleans here have exploded or sunk — whether his things were along?? — In the letter is given Ephedra — as is known as Texas?

I have added the description of a new Passiflora (at least not found in DeCandolle — If you know the name, or have a complete description of it, compare my short if you please.

Included I send a leaf of it; also seeds of Sicyos, a fruit of Sicyosperma?? again, & a Linum? or Milesiadea? a fragment of the only specimen I have. —

I shall now immediately [illegible] the introduction [illegible] the [illegible] since the plants were [illegible] the Contents [illegible]

The [illegible] is nothing but [illegible]

[illegible]

[illegible] that there [illegible] not [illegible] to compare [illegible] in the genus [illegible] —

I shall soon write again.

Yours truly,

[illegible]

1.

Phila Febr. 15 1850

Dear Doctor

, eluded I send you cartacea; perhaps too full but nevertheless not superfluous I hope. I wish you could abbreviate what you think necessary; but as these plants are so little known yet in regard to flowers, fruit etc, I have been on purpose a little full about them; why, all the systematic classification, of the species are as artificial as can be, relying on the form of spines etc. —

I have received Bistelius collection. A few good things, the balance only old species, but in very fine specimens, so Yucca tortifolia, Cassia Roemeriana, Daylidion etc etc. — I think we should class the mexicans at once, so as to prevent any scheeling. I shall send you my own, some soft and seeds, which are copious; — meanwhile I have examined a few: your Freporanpus Cav. which is certainly very different and probably a new genus, a new Ferdi a new Passiflora a beautiful Echites, which I had to examine to class it for I did not know where it belonged! —

The boxes must be in your hands now, hope the living plants as well as the dried are safe.

Dr Wislizenus' departure has thrown more practice on my hands; I can hardly work 2 hours in daylight — and those very frequently interrupted; my best time is from 8 or 9 p.m. till 12 — But I will tell you how I shall proceed now:

I shall first go through Compositae Eriogonums, and make the notes you want, together with those his last collection may suggest

Then I will again look through the Annuals — Valeria. of 1849 and give you any notes you may want

Select your set of dry plants as well as seeds. —

Cusontia will have to come then.

Meanwhile I have to finish the geography of Lindh. Utah ground, which would be a work of two hours for one on the ground, but for me will be very laborious as I have to examine all Lindheimers letters in that respect etc. —

My letter of Jan 30th you must have received in this time. I should be sorry if my notes should not have come in time for the printing — but I could not prepare them sooner. — Botany I can only cultivate in leisure hours and they are now plentiful. These collections & distributions give me a great deal of trouble and cost a great deal of time. —

Collection for Smithsonian Institution. In those two boxes are (together with those sent to Short, Sullivant & Durand) the best sets of Lindheimer's collections; — but they have already their destination, if any of the subscribers should refuse, then the set might be laid aside for Smithsonian. I am very sorry that I did not know anything about this sooner; they must take for the present an inferior set — but I will get Lindheimer to collect a very full set for them in future.

I have told you that Lindheimer is now in Texas, and all the common plants — everything — fine specimens — and sell for $4 or 5 in Europe — those Coll. would be well also for Smithsonian Institute etc — all the new or rare plants I would retain for a continuation of the off 8 collections, the others I intend to send at once, without taking any trouble myself with them, to Esslingen for distribution, but we must send a Catalogue along so that no such blunders as Rhoads' occur again, at least where we can help it. — The plan I believe is good for Lindheimer's pocket, which are very empty, if revolutions and wars in Europe do not interfere. Some sets probably will also be sold here. — I shall retain a full set and send you one.

I have a very full and fine set of Texas plants, about 300 species (Allemans) which are at the service of the Smithsonian Inst. — Of the old sets of Mr. Leich there may be a few left in Prof Brown's hands I have none left. — Of the new collection I have still here all the sets intended for Germany, of which some with about 350 spec. are not yet taken — but I see that I have sent you already a set (31.) with 359 numbers. — The lowest sets are 315 the fullest about 460. — In future the Smith. Inst. shall get one of the best sets of all the coll. that pass through my hands. —

The sets are carefully made, so as to supply where it was possible the missing numbers of the old sets of the same number so you find for example Kraunia only in the sets No 1–9 in Fascic I; in 10–12 in Fascic II, and in 13–40 in Fascic III because it was at first not collected in sufficient number and afterwards supplied. — It is necessary therefore to avoid confusion that each subscriber should get the ~~same number~~ set with the same number of first and second coll. —

I have not had time to look out Lowell's account with me I have been a little neglect in these things, but shall have them in better order afterwards. — I shall see by and by how we stand.

Tuily just sent me a bill for a few books — I shall need my account with him, when I get at Lowell's and include to you a letter for him.

I have not got Agassiz Embryol. — Mails most miserable now!

Febr. 15. 1850.

So you will go to Europe! To Germany also? How long do you expect to stay?

I shall have Hooker's Cucurbitae ready at all events, that is to say, if not entirely done with them, I shall work with steady send them off. I feel ashamed that I have kept them so long here and from him.

As to your being without children, you may yet profit by our example; my wife had her first child after 3 years married, which soon died, the second was born 4 years after the first (2½ years since) and no prospect for a third yet. — This boy, a fine healthy robust fellow of 2 years 7 months gives us a great deal of pleasure at present and hope for the future; he is of a serious disposition, fond of work, of simple mind, yet thoughtful, without being precocious at all. But they talk in such a manner to one who having no similar feelings may only smile at what he takes for a too common ~~the~~ weakness of parents!! —

A sea voyage, a stay at one of the [illegible] chalybeate springs in Germany or perhaps [illegible] than all a voyage over the prairies (!) may have the desired effect. —

You eastern men ridicule us, consider us not much better than barbarians, if we send invalids (I dont mean you now, of course — but mentioning the prairies reminds me of it) out in the plains and mountains, exposed to all the hardships of such a voyage for their health!! Nevertheless the results are often wonderful. But of course not every invalid would be benefited.

over

I shall want have to write again

Very truly yours

C. J. Sprague Sharp

I forgot to mention that Dr C. H. Schultz, Bipp." himself, the Compositae-man, has sent me for gratis & Torrey some diplomas, his portrait and some pamphlets; he wants all the Compositae sent to him etc etc. I dont know him personally, but from his letter he must be a vain presumptuous person though probably not without science for aught I know. I shall see & ~~the~~ things with Dr. Torrey plants.

Please to send at once (probably best as a letter) the pages of Bot. Journal, containing my Carex, as soon as printed to

Prince Salm Dyck

at Dyck
near Neuss
Rhenish Prussia

Prof. Asa Gray
Cambridge
Mass

Carex pumila n. s. Pursh
Mont.
Glum. Mus. Edinb.
n. Hab.

If Fischer's sheets (page 47-53) could be sent in the same way I should be much pleased. — He is publishing now a new catalogue of his collection with notes etc — and these data would be invaluable. — Lindh. ought to get a Copy of Pl. Fendl. — among the new plants are full numbers of Carex filipendulina — white leaved species,

25. Malvaviscus Drummondii Torr. & Gr. thickets along Comale Creek, Aug & Sept. 1846

545 Sida physocalyx, prostrate, ascending, in sandy soil on the Llano July 1848. Also seen on the upper Guadalupe

357 & 585 Hermannia texana on rocky soil along the declivity of the plateau ~~on which~~ at the foot of which Austin, N. Braunfels and San Antonio are situated. Also on sterile rocky soil on the Llano in July

Though the plant was referred to Hermannia [illegible] smooth, petals subulate, sepals [illegible]

This California Lindl. has been found also in thickets on the Comale near N. Br. in ripe in "July & Aug"

V. vulpina No 22. 1846.

358 V. rupestris

359 V. aestivalis var. [illegible] tomentum perfectly white not [illegible], as commonly; leaves only slightly lobed

Vitis indivisa Torr & Gr. 215. 1846

Vitis indivisa N. Braunfels.

366 Magnolia

361 Calycanthus

362 Asc. Pavia discolor

363 Ungnadia speciosa — only few specimens and female flowers; but a fragment with a few fertile flowers was added to most sets.

586 the same large shrub, not tree, many stems (1-3 inches thick 20 feet long only branching at top) from one root

Inflorescence forming a small short branch at base with scarious bracts, 2-3 peduncles, each 2-4 parted; sometimes this inflorescence terminates in a leafy branch, or a branch grows from the angle which the short flower-bearing branchlet forms with the stem (Lindheimer)

It came up well here, but I doubt if any plants are now living

587. Sapindus marginatus in flower, N. Braunfels June 1847

226 S. m. in fruit near the Brazos in August 1844

364 Zizyphus obtusifolius

588 " " " large shrub and small tree with very long gracile shoots, bark whitish green 2 shady bottom woods; May

365 Celtis [illegible] ~~out~~ tex

366. & 589 Condalia 1 foot diameter, 20-30 f. high — from the Matagorda Bay to N. Braunfels. flowers very sparingly. wood deep blue

319. Clem. Dr. x. Cl. reticulata N. Braunfels, May; "colour of flower the same as in Sherman's bottle"

320 Ran. sp. mucronatus

x Thalictrum Cornuti in shady woods; fl. April; rare in the western parts of Texas [Lindh.]

x Delphinium azureum N. Braunfels

321 Delph. sp. all fl.

The specimen coll. 1847 and 1848 and distributed with those of 1846. In this number were collected in the previous N. Braunfels gregatim [what is the best english term for this word: in patches together in the country — the opposite of "sparse" or sparsus; in April; flowers white or very pale blue [Lindh.

322 & 575. D. trif. Rocky soil, N. Br. March

Cons. this, near arvensis, single specimen, large with large flowers very short, adnate, scarcely tomentose, long and large seed pods. — I have requested [illegible] to call more of it

216 & 216 a mistake of mine. I put it in these collections which had not 216. 1844. — the 216. 1846 is different from 216. 1844

323 Sh. petiol. 1846 [illegible]: sandy bottom woods N. Braunf. [illegible] 1848 in other form with larger thinner leaves

x St. [illegible]

324. [illegible] Lindl

325. V-E

576 V-E. gravelly banks of streams near N. Br. May

326. V. angustif.

327 V. Lindh.

328. " dasyphylla Victoria

577 " dasyflora sandy prairies and gravelly sunny soil on the banks of prairie creeks near the Pierdenales, Fredericksburg etc. May. 1847

329 V. argyraea

330 V. reservata

331 V. gracilis Hook

what is 13. in coll 1846. basis. gracilis ?

" 303 " 1845 [illegible]

10 Cordilla say something about this plant which Torrey names I believe C. angustifolia.

332 Pol. tuberosa 4-6 feet high on sandy soil, banks of streams on the Pierdenales; the same plant in Julian was only 1-1½ feet high.

333. Poly. g. Lindh. Banks on the Pierdenales June 1847

13. Hermannia glandulosa [illegible] on the Comale and Guadalupe. April. June; — Principally where a rocky substratum is found. Roots often over 3 feet long.

574. 578. Solid stipul. Hook 324 for stipul. and 578 for leaves — but thought both not distinct

578. Muskit flats near N. Braunfels, May. 1848

222 Tarnychia dichotoma Nutt. rocky soil near NBraunfels, August

335. P. [illegible]

× Medicago ventricata, sandy gravelly soil on the Llano Aug. 1848.

330 M. prostrata

× Vicia [illegible] April 46 NBr.

579. Talinum aurantiacum; on hard soil with rocky substratum Aug 1848 on the Llano.

580 Talinum mucronatum

× Portul. retusa

× ? lanceol.

× ? pilosa, on the Llano, Octob 1847. [illegible] also on the upper Guadalupe

300 Cleistia texana (insufficient!)

337 [illegible] this perennial plant [illegible] of Cleistia ?! Styles distinct. The same was found in June 1847 on the Pierdenales

× C. Doustii such I think is correct 461 [illegible] 1845 [illegible] with perianth glands [illegible] styles 2/3 united and annual (or biennial) not, larger capsules [illegible] intermediate C. [illegible] aristate acuminate sepals etc — exactly as [illegible] plant which I used to name C. rigidum. — I think I must insist on C. rigidum as distinct.

338. Linum multiaule. The specimens for the Pierdenales 1845 & 462 Octob have fl. sessile — those for the same locality 1847 so far have fl. pedunc. and those for NBr. 1846 No. 19 have fl. sometimes pedunc. sometimes sessile, i.e. flowers terminal, on the branch lets which are at top naked or leafy! — Most of the sets have their cap. NBraunfels form. — The form coll. 1847 is not been distributed, nor is it even sent to you; only specimen preserved.

339 a? heudes. Lindheimer says: Linum not multiaule branches before flowering, & cumbent with flowers [illegible] Schweinitzianum [illegible] Octob Guadalupe Feb 1845

581 L. lewi. rocky prairies, dry soil. N. Br. April & May

a. rigidum — pine thicket. & N. Br. is no doubt the same as ours and = a. Doustii, styles united in [illegible] the Homestead plant has been sent to Boston and is mentioned by Planchon, annuals!! — April larger, sepal larger more acuminate etc. — L. rigidum appears well distinguished. — I don't know the true a. rigidum

340 Prodium texanum (four specimens of the coll of 1846 have petals; all those of 1848 are without a. says it frequently without petals. This year 1848 I have found very few with petals and those petals were very small, those of 1846 were 3 times as large. — NBraunfels April. — Also near Victoria March 1845 with fl. more than 1½ lines diameter

× Prodium caroliniana NBraunfels April 1848

341. Oxa Vesp.

342 Kalis mex.

582 Juniper conferta — rocky shady declivities on the banks of the Guadalupe; wood dark horn colour, becomes, after 15 minutes exposure to the air dark green; young fruit — July 5–10 feet high

343 Cupressus texana

also about 15 Fredsburg, on the Pierdenales

× Xanthoxylon Pterota? No. 400. 1845 N. Legard [illegible] Febr. not gal in flower.

× X. [illegible] No. 249. 1846 Octob not gal in flower. [illegible] have been sent to you. The latter is decidedly distinct from the former.

× X. americanum. N. Braunfels Aug. 1846 [illegible] which I did not send to you at the time

344 Rhus copall. Leucanth.

345 Rh. c. Cordata

346 Rh. toxicodendron var. vulgaris foliis, minoribus inciso-lobis — This is Schedules Rhus vernix

Rh. Toxicodendron var. mollis fl. sweet scented 6–8 feet high, erect, in hedges, you got specimens, No. 247. 1846

347. Rh. trilobata, rocky soil near Austin & N. Braunfels; shrub 3–5 feet high; young stems not thicker than pipe stems.

348 Rh. virens; also on Pierdenales on the Llano the specimens distributed in fruit only

349 Celt. pedata

584 C. digitata margin of thickets and under isolated trees on the Prairies near the Pierdenales. Root fusiform, edible more palatable than Porulaca oler. Leaf and flower 1847

C. mollicomata open Post oak woods on the Pierdenales June 1847

C. another C. Clarkae? I have sent you no. 411 1845. Febr. near Victoria. What is it? could it be C. pedata? some of the leaves are almost like those of Glechoma, others with cuneate lobes

Sida? XII. 1848. 2–3 feet high, branching; sandy soil on the Llano. flowering in Aug. apparently near Side Lindheimeri, or the same

355 S. filicaulis thick perennial root

350 Malvastrum Wrightii

351 M. capinifol. open flowers only in sight noon sunshine

352 Pavonia Wrightii

353 Abutil. tex

354 A. holoscericum. 2–5 feet high, apparently suffruticose many stems at base lignescent, from one root

If Sam was not mistaken — Pr. ~~nigra~~ occidentalis with a few earlier fl. large fruit, & the heavily bloomed abundantly on naked leaves is found mostly in open shrubby woods or in the thickets mixed with other semi-hardy shrubs. Sherman, Lancaster, Lowry, Cassopa, etc. — the groups of of Ribes are more dense and uniform than those of Sisyrinchium, but in neither other shrubs or trees are mixed.

By the by, do you know that you can take out one solid string or bony kernel — not from the Crabapple, Pyr. coronaria, ~~which appears to approach it the Crataegus~~? The inner surfaces of the cells are with Cagnaccia, as in the common apple.

387. Ur. nudicaulis, Tuscahoma plains. Looks very much like P. Chorizanthe, but leaves, shaped below, etc. Shrub, 3–6 feet high, not a tree; fruit eight red hairy and edge of a cherry, or a little larger, rarely 1 inch in diameter; growing thickets, at the margin of woods, not far from water courses, rarely on higher plains of the prairies. Fruit ripening; ripe in June; ripe in some specimens almost as soon as below.

Specimen collected 1848 in March; fruit really not bad pleasant.

Cornus asperifolia, Sept 1847 tree or large shrub, Pierdenales Cretacy, corn. mollis.

608 Rosa blicloa — grows high on the Prairies about the Sabinas and Three Creeks, stoloniferous very fragrant. May 1847

x Amorpha Celifolia var. a hybrid = A. texana Scheele (No 338. coll 1846)

610 Lythrum virgatum var lanceolata. I think you are correct; but I again find L. fallosum" No 52 Gr. a distinct species, leaves much less sharply angled, pedicells much shorter, bibracteolate at base. — it is certainly distinct from this 610. This last is remarkable for its long, wide spread stolons, which I believe are rarely found so distinct in our common L. alatum. That last has also here much wide leaves, ovate lanceolate, [illegible] and [illegible] at base — always I believe widest near the base. L. fallosum has those corrugated leaves narrowed at base, & lanceolate. This however is the case also in many specimens in 610.

609. Lythrum almost all the specimens distributed are 379 coll. 1847 on Rocks in running water, shallow places, Creeks near Sister Creek, May 1847. — Only a few specimens

2.) Canthus ovalis

590 Vitis Lincecumii

367 Phacelia [illegible]

Phas. Diversifolius, granitic soil on the Llano, Cl. Cty on shrubs — A variety with very small leaves and stipitate seeds produced here the common smooth large leaved form!

Apios tuberosa Pierdenales 1847

368 Galactia [illegible] — [illegible] on the Indian [illegible] 1847

369. Chapechosia

370 Martia canescens — creeping on shrubs [illegible] fl.

Clitoria mariana Pierdenales

[illegible] stems prostrate [illegible] small [illegible], passing, mail [illegible], on shrubs [illegible] [illegible] thickets [illegible] edge of woods [illegible] broad, obovate [illegible]

371 [illegible]

372. Sophora tinctoria. Sandy soil on the Llano among grass, prostrate, pinnate, [illegible] and [illegible] petals purple, carina [illegible] and back (under side) whitish. Root [illegible] Cypress Cl. Cty. August 1848

372 Vicia ceresii also on the Pierdenales,

373 Ps. floribunda.

373. Ps. cyphocalyx stony soil on the Pierdenales, May 1847 also stony prairies on the Cibolo May 1846

374. Ps. lig. var. gravelly soil, hills near Kerrville [illegible] Sept 1847

37. Amorpha fruticulata west of the Pecos [illegible]

375. A. fulvosa var. banks of streamlets, N. Mexico April 1848

A. fulvosa ?? sent to you under No 16. 1847.

on a creek near Friedrichsburg, June 1847

is it your var. glabrata?

39 Dalea aurea

375 D. laxiflora

376 D. fr. [illegible] also on rocky heights on the Pierdenales, Sabinas and Pierdenales, a small shrub 1847

D. pogonathera Llano, Oct 6 1847. (No 18)

D. nana gravelly soil in Porter's [illegible] the Pierdenales, June, June 1847

while Galactia appears prevail east in Texas Dalea take their place in the west!

596. & 598 = 230 Astr. carpenteri; but 596 has larger ray with shorter broader teeth and darker heads; from the low country; 598 is from N. Mexico; fit only with the latter, larger & smaller, oval or globose

The flowers of 230 are still in bloom

597 with exserted? Apparently different from over (A. trichocalyx; fl. much larger, cl. teeth short, triangular)

A. trichocalyx fl. [illegible], Shaw

I have certainly said specimens to exist before. It is seems a different plant. No 597 has pale purple flowers

599. Tomia tetraphylla (left out by you.) prostrate on red clayey soil thinly covered by poor Post oak & Black Jack timber, Friedrichsburg June

600 Lupinus texensis. (left out by you) elevated prairie plains, New Braunfels April 1848

3.77. Cercis occidentalis Peculiar to the Limestone region in Middle Texas fl. March

378 Sophora affinis

601 the same. N. Braunfels. Tree 4–8 inches in diameter, rarely shrubby; flowers on different trees of different volume, lighter or darker fl. May 1848.

379. Sophora speciosa wood dyes yellow — fl. bluish very sweet scented; tree 1 foot diameter 30 f. high the only fire wood on the banks of the Colorado Bay Smell of fl. much like violet forms small groves on the western shore, of Matagorda bay, there it flowers in February

602 the same fl. in March. rocky soil N Braunfels — tree or shrub

603 Hoffmanseggia Jamesii. Small shrub ½ – 2 feet high, many stems from a large woody root petals yellow, stamina red. On hard stony soil on the Llano, August, and after Bonifacius second growth in October.

380 Cass. Lindh. many stems 4–6 feet high from a perennial root

381 Cass. Roem. 4. 1–1½ feet high

C. pumila — always rather in cultivation the a cultivation, not C. pumila

What could 453 1845 be — a Mimosea, no flower

382 Nyssa biflora. in flower (233 was in fruit) Deep depressions in the prairies which during the rainy season or floods of streams are covered with water. Fertile heavy, clayey soil There 2–2½ feet diameter 30–40 feet high with few large rather erect branches — Also

forming impenetrable thickets, in the form of high shrubs [Masketal nex.]

It is almost the only fire wood for the traveller in the Prairies of western Texas. Horses & mules are fond of the leaves,* and, even men can sustain life with them. fl. in May

233 Nyssa gl. in fruit also distributed in some sets, must therefore be mentioned in the Catalogue

383 Mimosa nanthera var. lacerata shrub 2–3 feet high on rocky elevated plains near N Braunfels and on the upper Guadalupe not seen on the Pierdenales

384 Schrankia platycarpa.

385 Sc. nuttallii var. latidens, grassy slopes on the Pierdenales June 1847 — N Braunfels May.

386 S. [illegible]

Neptunia lutea [illegible] sp. — Bottomwood on the Pierdenales June 1847 fl. & fr.

Acacia hirta on the same localities.

387. Ac. Roemeriana Shrub or small tree, rocky hill N. Br. wood sent last year.

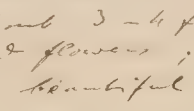
604 " " fl. April

605. — — fr. ripe in June. from N. Braunfels to the Guadalupe, and near San Antonio not seen further north & west

606 Mimosa frondosa shrub 3–4 feet high, covered with sweet scented flowers; rocky soil on the Pierdenales — beautiful purplish red. fl. April

607. " fruit

608 Cassia nictitans. 10–15 stam. in 2 or 3 or the third, innermost [illegible] often partially abortive



small shrub 1–2 feet high, forming [as over Fr. chinensis, but not the rings in] patches, dense masses. — [Cr. chinensis and least what I take for it Gray says it is Fr. rings. but flowers smaller later, leaves, Cassia nictitans etc.) as well as Prosopis glandulosa forms beautiful "islands" groves, patches on open prairies, free of undergrowth, forming a uniform dense mass of foliage, a little rounded on the edges — but none higher the interior is the rest — a grateful retreat to [illegible] a little [illegible] in the heat of the day

* It forms also for the Camp fuel of the Mexicans from the Gila to the Colorado. Travellers collect the Camp fuel of the Californians in sacks on the Camels for fuel in their return from Cocopah to the Desert

112 Cereus caespitosus Nutt. C. pectinatus, vide Wislizen. report note 45. It is commonly cultivated in Europe as C. pectinatus but here is a North mexican species, apparently not in cultivation at present anywhere; plant similar, flowers very different (if Wislizen's notes and numbering is correct, he sent the dried flowers and living plant with the same number. Cereus generally very accurate — plant since dead) plant however easily distinguished by the central spines. — —

Dr. Engelm. has sent the same as the Texan (C. caespit.) from Saltillo. Engelm. also has adopted my distinction and my names. —

245 C. cinnamomeus Nutt. rocky soil on the upper Guadeloupe May, June 1845 spining much longer than those on Industry

C. 3 Hydrocotyl repanda among high grass in moist places, creeping; rarely on dry naked soil, then the petioles shorter than leaves ~~smaller~~ hairy etc. — near Friedrichsburg 1847 Sept.

H. insubella on granitic rocks in shallow pools ~~of stone~~ rivulets Linnæ October

H. interrupta swampy places on the Guadeloupe. July

403. Erigeron alamanthi — very pretty in Cultivation

614 Sanicula canadensis thickets and woods in fertile soil, near Nacogdoches April 1848

615. Osmorhiza nuttalii, thickets on the banks of the Comalas, July 1847. 5–6 feet high

616 Chaerophyl. tainturieri β. Shady woods near Bonn. April & May

Ch. T. ex parte glabrius more hairy but plant appears to be more stiffly erect still more stiff and with more compact denser smaller leaves is a form from Industry No 39. 1844

404. Tragoropyrum ? lanceolatum, I send some unripe seed — annual, smells of Daucus. on the Guadeloupe & Comale May–July shady moist places, thickets.

3) Ph. — | from rocks in the Guadeloupe were in bloom Feb. 1847 and 450 Oct. 1845, from the Fredericksburg and 22 1847 from the Guadeloupe, which is given L. crassifolium. —

In all the localities it grows on rocks in running water is of small size, branched from the base, without stolons. Lower leaves of your specimen I have not seen; in the other, have small small lower leaves, obtuse but rather acute at base; which perhaps (leaves) and locality made me ~~through~~ them together and name them L. ovalifolium.

I once again examined them, and think all of them are not sufficiently distinct from L. obtusum. Though that species (22) has remarkably small calyx & flowers in short fruit.

610. L. virg. var lanc. moist places on the Fredericksburg May 1847. stolons spreading far, at intervals pushing branches of stems above ground. L. virg. var g. Tenn. is probably 336. 1846, Cabolo L. virg. var linearifolia 96, 1846. Wisconsin

391 C. missouriensis rocky slopes of Hills near the Fredericksburg & Guadeloupe & Cabolo fl. April — June. Corp. large or smaller orbicular or elliptical oblong — fl. 2–5 lines diameter

392. C. trilobata

392 C. semilata var. notice the black pits on which stigma is seated! in others on G. stigma black or dark, in others again both yellow.

394 O. sinuata var pinnatifida. folia saepe fasciculata

55. O. speciosa Nutt. Nacogdoches March 1846

53 O. Drummondii Hook Galveston. March to May

O. Tanacetifolia — I have had in cultivation a splendid Biennial — 5 or 8 feet high, flowers almost as large as in O. missouriensis. — stems over an inch thick.

On the San Fernando and Nueces, 3–4 feet high, Aug 1848 — —

You do not mention an Oenothera similar to putrissa but with fol. pinnatifidis, No 416. 1847 in thickets on the Fredericksburg in May. You have a specimen from me. — No, rather similar to O. sinuata, but erect. annual — Some small specimens with almost entire leaves, or sinuate dentate. It must be new. I propose to name it O. hirsutissima

60 Gaura sinuata N. Braunfels 1846
240 G. Drummondii " "
241 G parviflora San Antonio
611 G. suffulta rocky soil, open places in the Cedar woods, April; also in thickets. May — fruit remarkably winged, shorter or longer — leaves longer petioled than any other; annual?

395 Ludwigia natans
L. palustris, Liano October
243 Lysimachia ciliata N. Braunfels, July
Hydrophyllum heterophyllum 25. 1847
Hydrodales, May
Porzopinnara pectinacea 449 1845
Hydrodales
396 Mentzelia oligosperma
M. nuda
Loasaceae. on perpendicular rocks
seeds only to be obtained with the greatest exertions. — Gray has sent the same with much smaller flowers from Bell Hill 1847
? have a few specimens, of which I could spare one or two for Hooker or Torrey — Where did Gerardin get those North Mexican plants from?

× Passiflora tenuiloba n.sp. (or if you don't like that name P. diversiloba, or Lindheimeri)
petiolis brevibus eglandulosis; foliis supra pilis brevibus subscabris, subtus glabriusculis, 3 nervis, reticulatis, basi 2-glandulosis, subcordatis, trilobis; lobis lateralibus ~~linearibus~~ lanceolatis — linearibus, mucronatis horizontaliter divergentibus s. recurvatis medio brevissimo, in fol. inferioribus integro in superioribus brevior trilobo mucronato; stipulis setaceis; pedunculis binis petiolum bis ~~tertio~~ ~~longioribus~~ superantibus, cirrho elongato simplici; floribus eximie decoratis; perigonio 5 lobo, virescente.

On the Liano, coll in October. — Apparently near P. normalis of Jamaica [which I can not compare] and in size shape and colour of flowers near P. lutea. Petioles 2, pounds 3 - 3½ lines long; leaves rather rigid with revolute margins 5 - 6 lines 3 - 5 inches in transverse diameter, the lobes about 3 lines wide. Flowers 8 or 9 lines in diameter.

single specimen only, the vine grows in Sandhollows, which I include a leaf. Have a diagram of one of the spp. Loasaceae in another place

397 Cucurbita magna C.
398 Cucumis dissectus Echinocystis, Sect. pure wild species not [illegible] 5 parted [illegible] opinion is not a distinct fruit genus — Dr Wislizenus has coll the same plant in the mountains of Chihuahua with pyriform fruit

400. C. texana fr. pyriform 10 striated 3-4 inches long
I doubt know C. ficifolia, but from the description took this plant for it
401 Cyclanthera Lindheimeri, incl. elect was already collected near Industry 1844 in fruit; and again 1845-1848 from N Braunfels to the Liano; I have got specimens 483, 1845 & 27 Liano 1847 in I have distributed principally the specimens coll 1848 in ~~thickets~~ thickets, N Braunfels, May 1848. — Fruit scarlet, globose, 1 - 1⅓ inch in diameter, seeds oval, subcompressed, with two unequal teeth at the hilum. — Leaves larger in the distributed specimens (only in the 10 best sets) slightly, and indistinctly pustulous below; in the specimens from the Liano leaves small, below covered with and very rough from pustules, in some specimens lower leaves cordate hardly lobed — Include 2 seeds In Lowell set you must find good male & female specimens coll in May 1848
Root fleshy, tuberous in a specimen before me [illegible] 1 inch thick

× or rather deep red

4) 405 [illegible]
[illegible] [illegible] [illegible] [illegible] elevated rocky
plains between the Guadalupe & Pedernales,
in rather shrubs with rigid twigs, only
young shoots pubescent a little twisted
fl. dirty white
Viburnum prunifolium v. ferrugineum
[illegible] prairies near Fredericksburg April 1847

617 [illegible] Mountain. April 1848
in very large patches of rocky prairie, mixed
with very little grass only
618. [illegible] [illegible] [illegible] April
619 [illegible] [illegible] "
620 Hedyotis [illegible] rocky soil, prairies,
& [illegible] woods Nueces May
621 H. hispidula give it some other name
as that is not very appropriate.
pretty banks of rivulets near Fredericksburg, May 1847
622 H. h. [illegible] sandy prairies on the
Pedernales, May 1847
247 [illegible] [illegible] [illegible] sterile soil on the
elevated rocky plains about
Nueces [illegible] June 1847
Diodia teres, Pedernales on open
[illegible] with one or two branches from the
[illegible]
[illegible] petiolata Nueces [illegible] 1847
Polypremum procumbens Pedernales,
407 Spermacoce microcarpa n. sp. I should propose
to name it. The fruit is not only
much smaller and more slender, but
the proportions of the entire cells is different
they are much smaller than the seed, while
in S. radiata they are about equal and
in S. carinata larger. Those three and umbilicata
are the only Spermacoces known to me which
approach pretty closely, but the carinata
is a very different habit.

Bodemann wants some eggs of [illegible] knows
could they be got with you? You would
do him a favor if they could be readily obtained
to send some in a letter to
X. Lindheimer
New Braunfels
Comale County
Texas
[illegible] expenses charge to me.

[illegible] leaves at base often deeply dentate, almost pinnatifid or entire.

[illegible] i.e. the [illegible] to be considered as the extreme of this form, abortive only largest, and [illegible] the other extreme.

Spike. I send seeds again; they are nearly ripe at least full grown, as the embryo is already visible. [illegible] expected — but it can not be [illegible] on account of the long style. Treporaceum with sessile stigmata. I especially the <u>winged margins</u> of the capsules. But what is it?

Equisetum is also fragrant several times during the season in flower

Gray

Cucurbita perennis. The seed has hardly the margin belonging to the genus it certainly resembles more Cucumis though the flower is that of Cucurbita — it appears to be diœcious — at least we have a female specimen here which has never brought forth fruit or male flowers

Lichtenstein writes that Mr Augustin Torral who had been here, came in Feb to N Braunfels on his way from Matamoras — will probably return to Mexico in Summer. —

St Louis Febr. 22d 1850

My dear Doctor

So we go here in this famous city of St Louis. I had just finished my notes on Rhododendron and Arenthobium (between 11 & 12 o'clock) when the bell was ringing, and I had to run as fast as possible to see a man that was shot in the head — but here I am again revived by a walk in the clear bright moonlight night, about to close the letter intended for you.

About a week ago I sent you a voluminous letter. Enclosed I send the Compositae of N. Tex including those of the ed of 1849. — Also notes on Rhododendron flavescens and its varieties. I wish you would print here the notes I sent you a year ago for Hook. Lond. J. about Arenthobium, only alter the names as given in the included paper. — If from the want of proper material it can not claim perfection it may at least give indications as to the different forms in this genus and lead others to further explorations.

I have since received Gregg's lot from Magdalena sent in July 49. Of course all or most all the living Cacti were spoiled — some I hope to save — all the Orchideae etc are dead. The dried plants are in pretty good preservation though probably not very well put up from the first — But they mostly go entirely above my range, and I think the best I can do is to send you the whole batch, with the exception of Compositae and a few others, to examine and take, if you chose, with you to England — Some seeds I shall soon send together with a little money. —

Dr Gregg is extremely liberal in sending his collections, but he expects in return a well

digested Catalogue of his Collections. — So I wish you would, if time permitted, send me the names of at least a majority of the species sent to you. — As you have examined Coulter's and other Mexican Collections it can not be so very difficult for you. — A good many of his species you perhaps recognize at sight. —

I shall run over Lindheimer's 1849 Coll. now from Ramon to Velasco and note what is worth remembering for you — and send you together with short geographical sketch. —

Vale totus tuus

J. Engelmann

Includes Linsia, Palafox, allosa, Hymenopappus & perhaps other species, unknown to me. —

As soon as I have a little leisure I will make up a very full Coll. of Texas plants for Smithsonian. Let me first know which set you send them, so that I may know what is wanting.

WURZ
FEB 14
MO.

J. P.

Prof A. Gray

Cambridge

Mass

Stow [illegible] March 8th 36

Dear Sir

[illegible] 22d
[illegible] a few days ago (it is now
[illegible] 12 or 14 days on the road)
I [illegible] that you
would [illegible] settle with Lowell
College — you will oblige me if you
do it [illegible] at your convenience. This
will, I am [illegible] to be settling
somehow or other [illegible] the work,
[illegible] if you [illegible] or can not
otherwise — you are [illegible] thanks.
Flora Dor. [illegible] Your [illegible]
which has been defective with respect
I leave it to you —

I find that you received your 6 or
10 sets of Gage's [illegible] —
so that it would be [illegible]
I feel you it work me a good of
trouble to run thoroughly your and
other letters for the 6 years to
get at all the facts. I had been
neglectful in ~~writing~~ making
separate memoranda of these
things. —

I shall send in 8 or 10 days
100 — 120 [illegible] by Mr. Th. Kinsman who will be
in Boston on the of March or 1st
April, and take for me what you

may have —

You will find a memorandum of those seeds and those of 1848 & 49 in my accounts with Lowell — A memorandum of the Curtis seeds I am not sure — though I believe ought to be remunerative for the trouble and expense of collecting them. —

All I got from you or Lowell in that way were $75.00 for Cuttings Live plants — and $10 for Fuchsias Mexican seeds.

I leave those things with you but want every thing you settled some way or other — it has been neglected too long, and occasions us much trouble now — of Wright

Send me The Cultivator to be sure, and all the [illegible] if there are any — and send necessary to cover and forward them — as a loan to be returned if you want them back and for as duplicates.

Kinsman will write [illegible] of this whereabouts [illegible]

I will [illegible] be a few days [illegible]

but you have the choice of [illegible] willing — to compare with Wright and make out (perhaps — [illegible]) — I am getting [illegible] and more to [illegible] everything [illegible] with Cuttings at least I hope to hear [illegible] before you leave [illegible] — Will you go to Geneva to [illegible] to get organized with Brown. —

[illegible] me [illegible] exchange etc. etc. I have [illegible] a list of 40 or 50 of [illegible] with corrections! — If not [illegible] deserve him for similar attempts, I should know what will.

In great haste

[illegible]

[illegible] Lindley

[illegible]

Fruit of Cephalanthus occidentalis [illegible] very hard, seed red, large [illegible] black, [illegible] pulp astringent and sweet, glutinous, seed dark brown, small in proportion

[illegible] for tubing glucose, but not truly fluid — also for the separation of endocarp from the outer rind

[illegible]

[illegible] has sent to Mr. [illegible]

[illegible] 1844 . 1846 — $ 10.56

[illegible] 1845 1848 22.50

[illegible] plant 1846 [illegible] 16.00

[illegible] plant [illegible] 6.00

[illegible] plant $ 8.10 [illegible]

paid to [illegible] by [illegible] Gray

71.06

Mr. [illegible] in [illegible] 1846 [illegible] 22.50

Annals [illegible] 12.51

[illegible]

[illegible]

[illegible] Texas [illegible] 1841 [illegible] for by Dr. Gray. Also Mr. [illegible] 1848 [illegible] 1849 75, [illegible] 1850 (no) [illegible] 100 together 375 [illegible] been sent to Europe, I have no account, nor do I know what share of them Mr. Lowell has got. They might be worth (considering that there are duplicates) about 30 or 40 dollars all together

Hyde Park

Cambridge

Mass

BOSTON
MER
10

Kew Mon. 27 1850

My dear Dr. G.

Your letter of March 4 reached me on the 18th. I have waited before writing for the 4th sheet of R. Lindl. — I have not come but to-day I got the fifth (Dulcamara & Cassia) the other will probably reach here other a while. — Only think that I got Agassiz Embryology mailed Jan 18th by you & believe only 4 or 6 days ago — Mail in the west !!!

All what I have to say about the first sheets I have said before, or in this letter. Now a few notes on the last.

pag. 174 note, Epseuh. spinosa: ramis squarrosis not squamosis

p. 175 + D. aurea, ought to be (39.) D. aurea as in some sets supplementary specimens of D. aurea are distributed.

l. 6 from bottom N. Mexico means northern Mexico but would in most persons be understood to mean New Mexico.

your A. longiles wrightii is clearly my A. cryptanthus.

p. 177. Desmod. Wrightii tomento for tomento

p. 179. Hoffm. caviata It would be better to say: cum impari

elongata 24–30 – foliolata (not – juga) as just before you said of the other pinnae: 8–10 foliolatis

I at first read and re read it before I could understand it — It must be a curious looking plant.

p. 160. M. Wrightii ought to be in full: Malvastrum Wrightii as it is the first Malvastrum mentioned. —

p. 161. Abutilon Texense the same.

You must have received a letter from me Feb 22d and March 8th, the letter with Lowell's account minus the p. 30 mentioned somewhere else in this letter & letter to Wiley. —

Hinan will not leave before next Monday, Tuesday i.e. I will select your set of Lindl. 1849 for him to take to you with the seeds — but as the package will be too large, with the seeds, he shall take with him only the more interesting or new things the others I will send by and by. —

I am anxious to see Wright's Cacti.

Thanks to Agassiz for the second pamphlets he has lately sent me

Schultz works as you say a great deal at Compositae but he is I believe a vain and not very scientific

man, however he sees much, gets many collections in his hands — He is from Zweibrücken, Bipontia, but lives at Deidesheim a small village near Dürckheim (in the Bavarian ~~Pfalz~~ Pfalz, Palatinate) about 4 leagues West of Mannheim on the Rhein, and on a Railroad leading to Mannheim.

I have thought of the Nassau springs, acidulous (carbonic) chalybeates, especially Ems, not far from Coblentz.

I do not understand what you want. „In England I can best finish Fendler & Lindheimer, but give me all the families, you mean to work out to take with me" —

You have full sets of Lindh. & Fendl — do you mean Mr. Wislizeni? those families which I do not mean to work out myself? —

I have seen Wislizeni name honorary mentions in Humboldts Aspects of nature in several places. By the by W. has not gone to Vera Cruz but to Washington & the east and from there perhaps to Europe! — Fendler writes from Chagres — has been much sick there — is not pleased at all, but collects much now he says. —

Lindheimer is active — Treinl was there. —

Nichl. asks whether he can get a Catalogue of your garden to make a selection — and wants to know what he can send you from our plants wild here, which would be desirable. —

I have had under examination a collection of plants made in Minnesota, north of St Anthony falls last summer; by some U.S. Expedition — Only 132 species — nothing new — few things rare Remarkable only: Lupinus lax. flores Dougl. Heuchera hamatura, but almost smooth. — Erigeron glabellus — Helianthus Maximiliani β. asperrimus! — Sagittaria sinuata — fine specimens. Stachys palustris, var tomentosa ?? (that genus I do not understand well, we have several queer forms here) — Gentiana affinis — Oxytropis nigrescens! (so far north! Chorizy says a doubtful plant!) Calamagrostis canadensis β longifolia — Spartina cynosuroides! var stylis ¼ coalitis! (on ¾)

G Engelmann

Gray.

I have this day, 8 March, sent off a letter, including one to Riley and account of Lowell. but have in the hurry entirely forgotten to mention that I received the 2d sheet of Plant. Lindh. about a week ago, and am much pleased with it. some typographical errors in my Nothocarpaceae, one of which is bad, and must be corrected with pen: № 579 2d line pilosa ought to be: foliosa. The plant is quite glabrous in all the species!

same plant, 4 lines far below: style and stigmata

pag 155. note. ~~xxx~~ Tenuifolia: ad axillas pilosae

4. P. pilosa 2d line: stigmata not stigmatibus

stigmata glandular — hairy not glandular hairy

I am sorry about your view of Lin. superior. it is certainly personal and certainly distinct, — at least as a variety — the name was applied by me not Lindh — however that matters not — all the other north American yellowflower & Linum species I take to be annuals. —

If you can, send the sheets as they come out to Lindheimer direct — New Braunfels, Comale County, Texas: [illegible] to him and a few spare.

I have forgot in Lowell's account left out the amount for Greggs plants, $30.02 I dont know why or how. I suppose it is too late to introduce it yet?

Mr Hohenacker in Esslingen offers at my request to undertake the distribution and sale of Lindheimers cheap collections but at what conditions! — L. is to pay freight and insurance to Esslingen; H is then to distribute the plants, print the labels and sell the plants, pay all further expenses; and to receive as recompensation one complete set and the third of the ~~money~~ receipts. — Is that fair? But I know I do better! — I can not go into the distribution of these collections — have absolutely no time for it.

If Lindheimer can collect 400 species a year in 45 or 50 specimens he may sell them for $5.00 a hundred, and not make as much as $500 on them — but that is a thing better than he is doing now. — What I will do I think I propose him to accept. — He must first get more, depend deal, and then he may undertake large further expeditions.

I have received the 3d sheet of W. Winds. I mark a few typographical errors 344. Rhus. Copall. & 345 foliis — foliis — ought to be foliolis — foliolis

Sida heterocarpa, note pag. 163 it must be: pedicellos solitarios persistentes

Prof A. Gray

Cambridge

Mass.

U.S. MAIL 26 10

Gray

Aiton's Roemerianus is yellowish white, [illegible] (a [illegible])
Ehretia has yellow little corner in the eye of peas (a mist)

Salem April 16 1850

My dear Doctor

I have written to you last March 27 in answer to your last letter (of March 4th) and have received nothing from you since — neither letter nor proofsheets — neither has the missing 4th sheet (Cat. of Wheaton etc.) arrived. Have you been sick, or what is the matter?

Mr Rimini was detained here till a week ago, when he left so far as I know direct for Boston which he must reach during this week. He takes to you the seeds for your wife mother and those new plants I spoke over, which may be immediately interesting to you. The others have all been laid aside for you to be sent by express or some other conveyance, together with those of Peck and Ellis Greene, which you may want. Let me know about them. I had asked you before, whether you would like to get them to study with your Exploring Expedition collections in Europe. Let me hear soon.

Philippines has quietly turned aside from Washington and has gone to Charleston instead of New Orleans! and from there to Constantinople instead of New York!

Dr Jurgens who was here a year ago proposing to go to the Salt Lake & California to collect plants has gone to Santa Fe and from there he has reached San Diego by the Gila route. Whether he has collected any thing I do not know.

I closed I send you some introductions to Newton & the merchants in [illegible]

Sandler has written from Chagres, as I believe I told you, was collecting, had been sick, was displeased. I have not heard any thing from him since.

Very truly yours

Geo. Ing Emerson

I am glad to see that both your northern flora and text book are in our book stores and are bought. — Don't you forget the flora of Nth America!!

[illegible] May [illegible] [illegible]

My Dear Doctor

[illegible] [illegible] of May [illegible] was received on the 11th [illegible] [illegible] on [illegible] [illegible]. On the same evening I received [illegible] package from you, through [illegible] Kimmel [illegible] [illegible] which [illegible] [illegible] [illegible] with [illegible] [illegible] express. [illegible] [illegible] [illegible] [illegible] [illegible] that [illegible] did not contain the Cichoriaceae [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with the [illegible] that [illegible] never sent it to you! [illegible] Asclepiadaceae [illegible] [illegible] [illegible] have. [illegible] [illegible] package contained the [illegible] [illegible] [illegible] [illegible] 1 vol [illegible], and the [illegible] of [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] Dilleria [illegible] you with their distribution numbers. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] not [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] cells. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] among [illegible] [illegible] [illegible] distribution.

[illegible] [illegible] [illegible] [illegible] [illegible], especially that pretty [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] unnamed species will [illegible] [illegible] [illegible] [illegible] [illegible] to the [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] Coulter. [illegible] the [illegible] [illegible] [illegible] [illegible] only one [illegible] species [illegible] known to me. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] more [illegible] remarkable [illegible] [illegible] with [illegible] small [illegible] & [illegible] white [illegible] [illegible] and will no doubt prove!

The principal [illegible] among the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] C. [illegible], [illegible] [illegible] [illegible] [illegible] to [illegible] with them. [illegible] [illegible] species appear to [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] [illegible] interesting. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. But whether the two [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] with [illegible] [illegible] [illegible] [illegible] be [illegible] mixed? [illegible] [illegible] it not possible that [illegible] [illegible] be [illegible] [illegible] [illegible] plants [illegible] [illegible] [illegible] sheets [illegible] [illegible] [illegible] [illegible] [illegible] species? [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] you will get [illegible] [illegible] quite interesting to me [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] collections, material enough [illegible] [illegible] [illegible] with a few notes.

Do you want me to examine those [illegible] [illegible] right away and report?

I wish you would send also Asclepiadaceae & Euphorbiaceae (at least the genus Euphorbia), the whole family becomes too extensive at present for me, to study, where so many other

things are to be done.

Included I send copy of some old notes on some of Decne's Kinds, Gentianeae. —

Also the receipt for a box sent to you today, including

1. Nuttal Lindheimeriana 2d part of Coll 1849. — I hope Kimm has sent you the first part at once.
2. Nuttal Miscellaneae — every thing of any interest to you, with the exception of Euphorbiaceae & Malpighiaceae which had been before separated from this collection and mixed with mine. I put a number of new specimens with the original labels; these please to return, when done with them; retain fragments, brambles, parts or whatever you think proper. — The majority are duplicates, with labels with my name on them; these are for your collection or if you can spare any. — There are a number of duplicates for Hooker to whom I had promised some. N. Mex. — (Wolfgang you know has gone to Constantinople)
3. A small package of Lichenes from Lindheimer, which please to give to Mr Suckermann who I hope will pay Lindheimer for it what he thinks it is worth; very little I am afraid! He should also tell him, whether he ~~is willing to~~ should continue to collect in that manner.

I gather include two letters, of which I have spoken a few days ago. Dr Roemer is a very gentlemanly man, of a great deal of instruction who will make you pass a day or so most agreeably and instructively at the delightful Bonn and Oppelsdorf or at Drachenfels and the Siebengebirge.

Yesterday I found in our papers among the latest California news an account of the death of Mr Gregg! I was quite painfully affected when I read that he died from fatigue of a winter journey in California on Clear Lake, Febr. 25th. — I had heard nothing from him after he left Mazatlan. I have requested Prof Short, who was better acquainted with him than I am, to honor his memory by some appropriate public expression. Did ~~if you~~ I would ask to ascertain whether my Greggia nigescens, which is undoubtedly the Cowania purpurea of Torrey, is really or not a true Cowania — it does not, as it was a mistake that the carpels had no tail — they have a very conspicuous one; and it appears that the other distinction, the valvate or imbricate calyx is not good neither, as it is said that Cowania has notwithstanding Don's assertion also an imbricate calyx.

Another, however less painful surprise created a letter from Arkansas from Fendler received yesterday! He was sick in Chagres for a long time and finally left when the rainy season of 8 months commenced. — He has, it appears, got enough of the tropics!

No new sheet of N. Lindh received since my last.

I hope you will intercede with Hooker for me in regard to the Cupressinae. I shall work on them this summer.

I have to give you notes & localities of N. L. 1847 & 48 from comparative duplicates; they will be sent in the fall. —

If my practice continues as lucrative as it has been for a year or two I hope to be able after about 5 years to devote more time to Botany. I am sick of the constant pressure here and pressure there — constant interruptions &c &c. — I should like to know how physicians like Mr Morton of Philadelphia, Marshall in England and others accomplish so much without neglecting their medical practice.

Fendler appears in difficult circumstances and wants me to buy his Chagres plants from him. I have declined it, and will advance him some money on them and then send the whole either to Hohenacker to sell under the same conditions, or offered to Lindheimer, or try to do better. I don't know yet how many species or specimens he has collected — he says they are in very good condition.

He also asks whether he can not obtain your Genera Illustr., Flora of the northern states, Michaux' Sylva and Continuation and may be other necessary botanical works in exchange for the Cactus sets of his Santa Fe plants — partly in my hands yet. "I am getting more and more in love with Botany."

Perhaps I will send to you in Sept. a list of the Chagres plants for Bentham, Hooker or such persons who may undertake to name them. — I shall put aside one for you, of course.

P.S. I forgot to include in the box the papers of Dr Lindh, a diploma for the Collection Medicae, his portrait and some other publications of little value. If you should meet him in Europe, you will not to lay the blame all on me, as I deserve it.

if, nevertheless, you have nothing! they are safe here till you
[illegible] the next letter to you will probably be directed to Kandahar
[illegible]

[illegible]

the expedition is likely, I have promised to stay — will he work the [illegible]
for [illegible] for [illegible] — or you?
[illegible]

Enjoy a short [illegible]
[illegible]
10/20
Capt. Brice [illegible]
Mooltan

When you come in Bonn or in [illegible] to the [illegible]
[illegible] enquire at once for the gentlemen you want to see
and send your card with my letter, as you will not have time
to stay long and walk about a good deal. you may write to one
the gentlemen [illegible] the letter [illegible] and have it with you
and they will come to you [illegible] the [illegible]
you will be much pleased with learning a great deal and well instructed [illegible]
whose name is known to you is less interesting, [illegible] in Delhi, at present.

St Louis May 22 - 1888

My dear Doctor

I have received two more sheets of the Truth and some corrections, mostly of little importance. I will return to you a few days after with enclosures.

Here the phase of Shen incorporated with it had forgotten to send in the box on letter before. —

Thanks about your wish to come to work out among Wights, I will do with pleasure. But you ought to send me Wight notes, especially about Cartis. —

Nothing since from Kimen. I should like to get the last Cartis.

This will no doubt be my last line to you before you leave. Therefore farewell and ~~many~~ best wishes for a prosperous journey!

Very truly yours,

Magelmann

Shelex has disappeared again, but look in the country and among the 500 California Dungeons it.

10

Gray

Bridge

Illinois

St Louis May 28 1850

My dear Dorton

yesterday I received your letter of May 17 and today the Linnaea. On the other side you find my notes on Schede. — I am astonished that he should continue his publications, — or that Schlechtendal should still receive them. Still the Labiatae do not appear to much amiss as the former plants.

I have written a few days ago, and have nothing to answer; I have told you about Cleomella —

I think you are correct in reinstating Linnaeus superior — I do not know why I wrote L. superior Lindl.; for his label of May 1846 "in crevices of rocks" etc has only "Linum" But it matters not.

Dr Roemer has published a work on Texas on his travels there, with a scientific appendix. This is a complete Catalogue of his plants by Scheele. but what it is I do not know, not having seen the work yet. —

Please send or take copies of Mr Lindl. to Germany to Braun 14 for subscribers 11 & 3 for himself.

Klotzsch in Berlin 1

Senkenbergian Society 1

Regensburg Botanical Society 1

Ledebour 1

Grisebach in Göttingen 1

Bischoff in Heidelberg 1

Dr C. H Schultz Deidesheim 1.

If you have enough also Dr Ld. Schultz 1

Pollichia 1

Dr Stecky Hamburg 1

(also one to Dr. Roemer and perhaps to Pastor A Scheele, through Roemer)

All these might go through Braun if you chose so. some of the gentlemen however you will see yourself.

In the U. S. you send Copies to the following subscribers

Short
Gillman
Greene
Mead Wm
S. T. Carey
Lowell
Smithsonian
Durand

N.B. formerly you wrote you took No 30 for Smithsonian Institution and lately you mentioned that you had sent there No 28

The 8 or 12 English subscribers you know and will attend to

Besides those you will have to send Copies to Dr Riddell, Mr Curtis, Dr Chapman, Prof Torrey, J. Carey, Philadelphia Academy; and if you have copies enough perhaps also to Dr Darlington, Dr Riesken, Dr Carpenter, N. Olney, Mr Lapham, Olney, Cleveland, Buckley, etc. Send me a dozen copies or so also. — Of Tenelly I have just one to spare.

I write again at Midnight, after being kept out by some cholera patients. That strange disease visited us about 3 weeks ago — for 2 or 3 days, killed off about 2 dozen, and disappeared again. — Since Sunday we have it again; still it is expected that it will not be very bad.

If that is C. Urna or near Urna, our common plant here is something quite distinct from that species —

My next will find you in New Haven probably.

Very truly yours,

G. Engelmann

Nothing yet of Wright, Cactaceae or my Mss. of Asclep. or your Clematides

Schedule articles for Gray.

1. Schoenus ferruginea = C. L. N. 493 & 494. The first has broader leaves and an almost glandless calyx; the second has narrower leaves and strongly glandular calyx. S. Coll. 1849 is a second species of this good genus, viz. No 50, I believe. I have indicated it in my notes to you and given it a name similar to Schoenus. I believe Dr. L. is of course is ahead of me.

I have kept no memorandum of or copy of my notes on Collect. 1849 but I believe have sent you copy.

2. Carex Roemeriana = N. L. 499
3. C. corifolia = N. L. 145 in fasc. III & IV. A variety in Mass. of a species with narrower rougher and more glaucous leaves. Dried flowers might be taken to be red if they are no doubt blue! No doubt about the identity of the plant, account of Smithsonian label.
4. C. aenea = N. L. 498. C. farwanea Boott. C. Sartwellii Dewey.
5. Bigelowia Roemeriana no doubt = Dr. Gattinger's, 850 Mag. that not the tube of the corolla, the gray is pubescent but the filaments. Unripe seeds empty when dry, and therefore concave.
6. Hedeoma acinoides probably = 496, the annual plant.
7. Stachys umbrosa = 490 but verticillasters not 1-2 but 4-6 flo.!

So far as I can judge N. L. 6 & 7 are quite one species

Prof Asa Gray

Cambridge

Mass

St Louis May 31st 1850

My dear Doctor

Lindheimer writes me, that he plants many interesting plants in his garden, with the intention to send you perennial roots and bulbs next fall. He intends it as an experiment, dont want any remuneration, only requests you or the garden to pay transportation. —

I write immediately to know as soon as possible, whether you want them even in your absence from Cambridge — and where they should be sent? To whom directed in Boston? At what season to send?

Lindheimer would if you like the plants sent, obtain more of those you should wish next fall (1851) and make it a business then of it.

I have written two days ago about Shecles plant.

I include a few fragments sent by Lindh — his letter. The Chamaecrista is unknown to me; the Euphorbia? shrub was sent by Wislizenus from Monterey; the Ohara? is very pretty. —

NB Wislizenus has sent an Echites similar to Lindheimer's but different, from northern Mexico

You will get this letter probably before leaving, but have leisure to answer it on board ship. —

To whom would the plants be directed in Boston on your absence? —

In haste yours

G Engelmann

I feel almost ashamed to write so many words for such a pile in Cover! but you will excuse. These fragments of Lindh. plants may perhaps be interesting for study of Dr. Wright.

Prof A Gray

Cambridge

Mass

105 1860

Gray

I have received many new plants for (for many specimens, I find, I should myself) of several of his cards, some of them very new to me, & no difficulty and have been correctly referred by me, so I assume correct about Phlox Roemeriana which is one pretty pink which might be called philogiflora or [illegible]. Sabbatia stellaris Texanum is the plant I referred it to, entirely without glands on the calyx; the peculiar form is a mere variety. — Gaura Roemeriana was wrong: [illegible] if I dare judge of the fruitless specimen. It can not be any thing but a pubescent variety of Gaura epilobioides; the only thing such stickers a little is that [illegible] would not have found this pencil near [illegible] pits; and he collected a more glabrous form at Comanche Spring.

I have seen Roemer's work now. Very interesting in a geographical & geological point of view. The botanical appendix by Scheele contains of course all his determinations. — Cephalanthus epiphyllus (Scheele Mss) may be C. occidentalis Nutt. (no description given), but, name is preoccupied.

The package of Wright's plants by Express arrived on the same day with your letter — I am very much pleased with the many new things. Several copies of Mr Reich. accompanied the plants, but most of them addressed to different persons, some of them earlier others, whose place of residence is unknown to me, Mr Ravenel, Miss Morris & Chapman etc etc. Is this by mistake? — I shall lay aside these numbers till I hear again from you.

St Louis June 27th 1850.

My dear Doctor

This then goes to Freiburg! I wish I could go along and spend a few weeks with you in Europe instead of being kept here confined to the dirty streets, and day and night occupied with sick! We have a touch of the Cholera again, in fact had it since two months and my time is entirely occupied by my patients. But enough of that.

I am looking through your last letters May 27. June 9 & 11 and am astonished not to find any mention made of the Box of plants which however had been sent in time to have reached you in the beginning of June, I hope you got it though and only forgot to mention it in the hurry. It contained principally the plants of Idaho City. But while I have this hope and even assurance, I am sorry to tell you that the Cacti of Wright have not arrived yet. Mr Wimm, who no doubt has them in his charge, has been retained in New York by sickness, and is only expected here in the course of the week. — The first package you gave

him he sent with goods per express and the are in my hands more than six weeks!! — I have mentioned before that the second batch of P.C. Wright reached me safely about 2 weeks ago — Thanks for the copy of Text book.

To whom am I indebted for Wright's plant, and what return in money or otherwise must I make?

You will have got the fruit of Fendlera among Wright's and will have seen that it is a very good genus, abundantly distinct from all mentioned in DeC Prodr. — You must have it figured. — Should you not have all those figures, as Greggia Wislizenia etc in the same style as those in Genera illustrata so that they can be interculated there? — Thank for the sheet of P.C. Wright and for your kind remarks about me in several places. —

about 15

Fendlers sets still in my hands contain for 6 — 100 species many of the best plants among them. Lindheimer's sets, 32 — 40 still are contain over 300 plants each. — Both I am willing to dispose of at any reasonable price; I thought at $6. or even 5. per number; I should like to dispose of them in a lump. — Thank you for all the new subscribers you may get. —

Lindheimer's silkworms have come out and are doing well.

I have again received Wilby's bill by mail, and have sent it to Putnam to settle by my account.

Among Wright's Nyctaginea I found also the Pimmanchia, already sent by Gray & Wislizenus; — and the Allionia sent by J. W. & Lindh. — All the northern forms have a larger fruit with blunt teeth — or hardly any teeth on the back; Gray and has sent a smaller form with much smaller fruit, a change perhaps teeth; — I believe I have noticed the difference on another place.

I hope Mrs Gray and you will derive all the benefits in health, enjoyment and in knowledge that you can desire from your trip; that you will be pleased in Freiburg and with Braun I can not have any doubt. Write to me often, when you can spare pencils you, and tell me where to send anything.

Ever truly yours

J E Engelmann

P.S. A letter from Lindheimer rec'd a few days ago contains some specimens. Geja incana Lindheimeri, pl. with very large terminal flowers; a species of Nicotiana, "perennial" with some pl. greenish flowers much like N. nitida. And a composita which is entirely new to me, and which I include. Is it among Wright's — or do you know it?

Apparently Solidago incana, rajf. & fertile, achenia compressed and with 1 bristle! — my & also —

He mentions Rhus aromatica again, a very singular shrub, seen often several 3 inches thick, 3 feet high; branches erect, branching only at top — fl. always red in October.

Rhus trilobata aromatic like Rh. aromatica

Vitis incisa climbing much like Ivy [rooting?]

Kommerii Convolata root often 1½ inches thick

Opuntia n. doubt frequently forming hybrids, or at the intermediate forms in stem, habit, flowers & fruit between O. macrorhiza & M. Lindheimeri! That increased the difficulties of this difficult genus!

Tecoma from Comanches country with white flowers

Opuntia macrorhiza has again flowered with me — beautifully red inside! — Does any body in England know O. rutila Nutt?

Mammillaria Barbata a seedling from Cosiguanachi has flowered — pretty red flowers much like a small M. radiosa.

Vale

J. E.

[illegible]

Roemer's texan plants described by Scheele in Linnaea 1848 vol 5

p. 455 Desmanthus velutinus = Plant Lindh. No 385 seeds however not elliptical but rhombic,
— D. falcatus = 386 ? Desm. brachylobus — leaves and fruit are sufficiently well described, but not flowers. — Were two plants mixed ? — The labels are evidently changed. My own, from Lindheimer, exactly the same, show that 385 is from rocky soil and procumbent (partly so, or rather many stems from the same root, spreading or erect-ish!) — 386 is from wet ponds and is strictly erect. —

L. Mimosa Roemeriana 384 ? Schrankia angustata — most probably.
— Acacia Roemeriana, perhaps a Mimosa ? Not ~~of~~ among Lindheimer's plants, could it be Mimosa texana Gray ?
— Cassia Roemeriana 381
— C. Lindheimeriana 380
— Dermatophyllum speciosum 379 Calyx certainly very different from that of Sphaera affinis. Is that constitute ~~specific~~ generic difference ?
— Cisplium Roemerianum, unknown to me.
— Petalostemon virgatum nothing like it in Lindheimer's or Bromfly Collection
— Amorpha Roemeriana ?
— Lupinus texanus 374
— Psoralea Roemeriana 372 Is that the same as Cryptotropa Torr & Gr. ? Spikes interrupted, somewhat loose. Lowest tooth of Calyx much longer.
— Indigofera Lindheimeriana ? No Indigofera in Lindheimer's collections from that region.
— Phaseolus maculatus 367
— Lablab texanus 368
— Heterocarpaea texana 370
— Ionoxa amantiana 350
— M. Lindheimeriana 351
— Porrenia bisiopetala 352
— Abutilon holosericum 354
— p. 576 Oenothera capillifolia 394
— O. uncinata ?
— Jaumea Roemeriana 240 ? Jaumea Drummondii
— G. hirsuta ? I thought first it might be Oil, but it must be quite different.

ci. dorigin flexicaulis 395
Physianum Atkinsonianum 324
+ Draba Roemerianum ?
+ D. filicaulis ?
Ranunculus macranthus 320 Smaller flowers occur also amongst Lindheimers specimens — does it belong to the numberless varieties of R. repens?
Tritomea texanum = 400! Cacalia ovifolia ?
Echinosyptis pedata = 398
— Vesicaria angustifolia Nutt = 330? on account of the pedunc. purlif. deflex: " but then it is no doubt "different from Nuttalls plant
Ammannia texana sent to Gray among the 1846 plants with the number 338 — not distributed — Stamina 8 flowers larger, petals larger, style a little longer — seed the same. —
— Ingratia heterophylla 363
— Vitis rupestris 358
+ Berberis ilicifolia 322
+ Rhus vernicosa 346 R. Toxicod. var. The "vernicae" on the leaves are evidently accidental, wounds of insects or disease? with exsudation of black varnish, — They do not occur on all leaves
— Prunus texana ?
— Pr. rivularis 389 = Pr. chicasa ??
— Prunus texanus 364
Oxalis corniculata
— Linum Berlandieri "mihi"
Galium texanum most probably 617 Gal. virgatum Nutt
description miserable, folia superiora sena — but only when one flower is in the axill — when there are 2, then the leaves are octona according to this Mr. Schule — but the "leaves are actually always quaterna — the two or 4 additional ones are bracts, or lateral leaves on the short peduncle! —
+ Kuhnia eupatorioides 411
— Eupatorium Lindheimerianum 413
+ Solidago Lindheimeri 417
— Grindelia texana 418

pag. 747 Convolvulus sagittifolius 469. — I have also a form with much longer peduncle. —
C. sinuatus 470 our C. lobatus. very variable from cordate or almost reniform the leaves are sagittate hastate, lobed etc. — Sepala basi sinu producta! — I have a form with 2 flowered long peduncle.
Cuscuta ~~neuropetala~~ pulchellum 475 one of the forms of C. neuropetala.
Convolvulus affinis ?
Phlox Roemeriana no doubt 467 [illegible] the description agrees except [illegible] The lobuli are probably regular 8 [illegible] !! and the plant must be a Gilia !! — I have [illegible] from the Cocks taken it for a Phlox, relative to Ph. Drummondi! —
Gilia Lindheimeriana 466 = G. incisa ?
G. glandulosa 465 = G. rigidula ?
Bouvardia Roemeriana 500
Now for the Asclepiadeae !!
A. brevicornu 653. b. most probably, which is Anantherix decumbens Nutt — but: Corona staminea summo gynostegio imposita, Schule! If that is true I understand it right I must be wrong in my supposed recognition of the plant
A. longipetala 458 Anantherix paniculatus Nutt
A. linearis 456 A. linifolia Kunth
Gonolobus granulatus 461
G. uniflorus 460 Roulinia
Metastelma barbigerum 459
Linaria texana ?
Dipterocarpus Lindheimerianus 506
Dicliptera glandulosa sent to Gray: old of 1846 № 388 distinct (but whether specifically!) from 160 D. brachiata b, the hirsute appearance — larger flowers, the "glands" are probably "Sphaeria! if a good species (!) it ought to be named D. hirsuta
Solanum Lindheimerianum 481
S. Roemerianum = 281 ?? but much smaller (Nicot. Roemeri = 483

Mr. Chas. W. Ayres
Cambridge
Mass.

Hall I see

they arrive

[illegible] or [illegible] Step [illegible]

The other day I received without [illegible] the [illegible] per express mail two sets pl. Geyer [illegible] also [illegible] of duplicates sent for Buckley 5 years ago through Riley — Probably all that was left in Buckley's hands.

I have drawn on Cunningham. —

Does not Howard charge very large commission?

I shall soon send Fendler's Chagres plants, and Gregg's plants; the first are arranged & catalogued; I have learned nothing further of Gregg — his collections.

My best wishes for your health and happiness; but do not overtain yourself!

I shall write again as soon as I have to communicate any thing of interest to you.

[illegible]

[illegible] remark — his letter about [illegible] with 1-bristled pappus is: "A small yellow composita, high on rocks, large Cyneoides 200 ft."

A few days ago I sent a letter to you to Boston — forgot to mention that the Tulinums are now in flower with me. Talinum parviflorum is very distinct; pale rose colour; small flowers. — with me always 5 and stems somewhat procumbent or rather ascending only about 5 inches long. —

There is an appendix to Roemer's Book gives also a number of new Cactaceae. — Too they clash with mine. I can not tell, till I get further the Mex names without description: Echinocactus [illegible] (and probably is my Fruit stromanque?) — Boerhaavia viscida — Gaudeloupe, Linthemer) — Euphorbia Cyathophylla (? a. [illegible]) — some [illegible] in town, a good deal of sickness & death and a greater mortality than ever (with the exception of last year) — I am of course extremely busy — and not able to do any thing in Botany. —

Lindheimer says: Rhus virens stems 8 inches thick, prostrate, branches great [illegible] and branched only on top — "Comanche tobacco" very unsavory to smoke.

Vitis inrisa climbing, rooting, like Hedera

Krameria root often 1 - 1½ inches thick, very long

Eysenhardtia sweet scented

Dalea lanifloa herb & spike very aromatic, much like Carum

Gaura Roemeriana fl. white or whitish, sweet scented

Oenothera fragrans red, rose coloured or somewhat purple

The different species of Oenothera appear to form natural hybrids!

Tenorium from Comanche spring flower white

Juniper. angustif. flowers larger violet-blue

Amblyolepis setigera. N. Braunfels and many other plants, to me unknown, e.g. a [illegible] flowering shrub, perhaps Philadelphus, with such petals

Cuscuta persuvis certainly monoirous, but fertile flowers much rarer than sterile,

Scheele's catalogue of Roemers Plants mentions Ipomoea nyctoflora from Houston — "in Roemers collection under the name of Rhex vomitoria" — this last is most probably the plant!! Oenothera can not grow near [illegible]!

A Coquesia has been in flowers and 3 Bolivanias

The first appears to be the same plant as that distributed in N. Lindh. No. 196. I can not say whether it is the true C. Drummondii — a third species is N. L. No. 197 — a third No. 542 is distinguished from both by [illegible] narrow channeled leaves, smaller sessile flowers; 196 has oblong lanceolate [illegible] frequently [illegible] a much shorter tube. — One may be called longiflora the other brevi flora — but which the true Drummondii is I do not know — probably 707 — Drummond did not collect [illegible] collected [illegible] at Corpus [illegible]

-ticing I will not do anything in Mosses & Lichens now, before having gone through Cesnuntes — but if you want at any specified time, I hope you will say so and I shall try to be ready. *)

Letters and parcels shall be sent as you direct.

I hope you will do me sheets of N. Brighiana also, when printed — or have them sent, when you are absent.

What is Carey doing? Surely I shall make out a Coll. of some Gl. Kind & Tenth for him or which there are superannuating duplicates.

So Wright has found Basilicania and you consider it distinct from Oxystylis!

Wright's Sisyrin. from the Isle Grande May be the same as the fragmentary specimens of Basilicania from there — if so, it is very different from Lindheimer's small one, etc.

*) I see from your letter you mean it — September in London. Well!

Will Porter work out Vegetation? if so, I will send him those of Basilicania — if not I will describe the 3 or 4 new species myself — 2 of Sphenomeris (Quemoclidium) 1 Allosorus (new Genus) 1 Lethromia 1 Pteris calyx and a new genus! from Cosiguirichi.

I write again before you leave.

Very truly yours

J. Torrey

Gray

[illegible] from that Reader confirmed by his observations in our western Prairies, in May the singular observation about the north and south direction of the leaves of the Rosin Plant (Silphium [illegible]) are not vague. Lindheimer writes, now that [illegible] with the compass he has satisfied of the correctness of this statement [illegible] this plant [illegible] against several [illegible] this plant.

[illegible] from [illegible] (Silphium [illegible] perfoliatum, [illegible] compass plant, spherical [illegible])

2nd and today 2 Aug 1851 three boxes to Brown Shipley & Co Liverpool — one or two containing seeds from Mr Riehl for Hooker the second, the smaller box of the two for you, containing part of Fendler's Chagres collection; the largest containing another part of the same collection; and further:

5 Cundles Gregg's Collection — April — June 1849 with the Catalogue of one of the Cundles, prepared to [illegible]

4 Cundles containing two sets of N. Leach. Nos 39 & 40 valued at £25, containing each 315 species

14 Small Cundles of Fendler's Plant. New-Mex X 17 Nos 61.-74 —

a number of seeds and fruits and cones from Gregg's Collection

a package or basket of Gregg's plants

Lindheimer writes: Oxalis violacea not in the west of Texas; about Industry & Houston in flower only in spring. Oxalis Drummondii only in the west — in flower always in October never in spring.

Have Nolte you that Lindheimer confirms the meridian direction of the radical leaves of Silphium laciniatum?

Braun writes that he had sent plant for you to Meisicken East Fall — with some for me — You have them for me till you return

[illegible] 7 [illegible], 1851

via New York or Boston
and Liverpool Steam

Prof Asa Gray
Care ~~of Brown Shipley &c~~
5 Cumberland Place
New Liverpool
London

FEB
S B C

Miami Feb 6. 1857

My Dear friend,

The letter of Mr Gray has seriously alarmed me — Your fall must have been tremendous — and broken ribs are a more serious evil than a broken arm — I hope and pray however that no permanent injury may result from it —

I shall send you Cattaraugus seeds soon, Cattaraugus soon after, and then other varieties as I write. — &c

I was under the impression that I had packed with the plants Gregg's catalogue but I find it still here — I shall soon send it with seeds for Hooker and woods. —

Fendler wishes Hooker to take the largest of his sets together with all the fruit seeds &c — and pay him according to what he thinks them worth. — He would be much pleased if a Catalogue could be made and published so as to make the sets more valuable — He would be much obliged to you if you could put them in a train to be sold.

Fendler's small sets of sets ought to be sold say at $5 a hundred and Lutherian remaining sets at the same price — away with them! It would not do to keep them as dross. I have taken part of Fendler and Lutherian for my exchanges at that price. —

I have received a Lutherian roll of a week ago

1850 but not yet been able to open it — it shall be done soon, and every thing which can be of interest to you, shall be sent to you with the seeds you spoke of as soon as possible.

You know that Dr Pumble died in California. — Dr Le Conte is also there practising chemistry.

Asa Gray will become of the age of 21 next month. The papers say the Prince of Wales is now in California & I hope we shall see what he will do there. Could you not make arrangements to have a little bit of surveillance?

Is Senelle going on?

Abbot Lawrence thinks he has 4 Nieces about 11 or 12 and is sending to you a garden tree & roses.

I hope you will trouble yourself not too much about the money affairs of Uncle & Family — and save your valuable time for your studies.

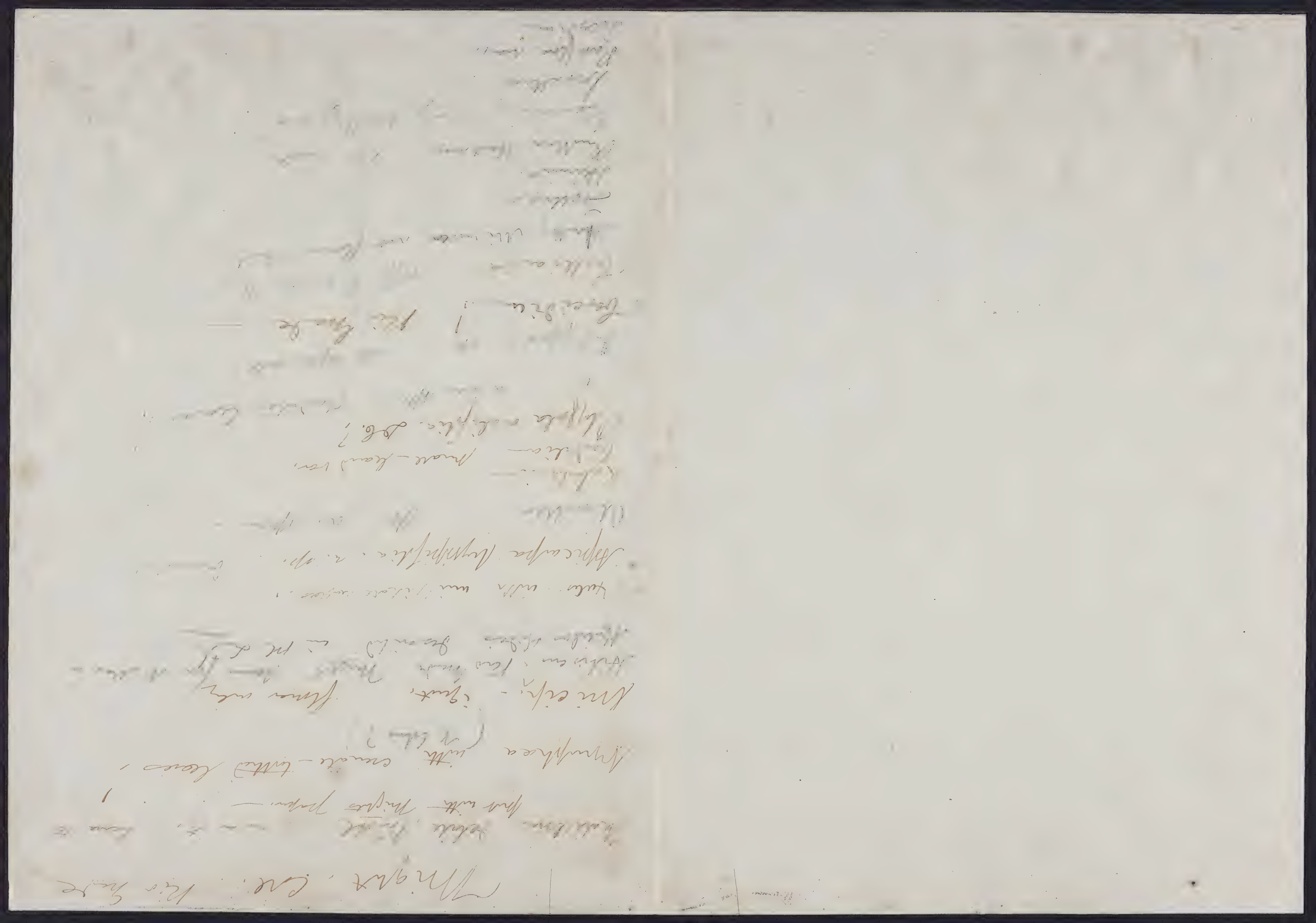
I believe I have told you that Wright is married to a "Quaker girl" and settled now in Washington. I am glad to have such a correspondent there who is so competent to do a great deal there.

We have had hard political struggles here as the papers will have informed you — but we are getting more quiet now — they have taken a little in my time at Rose and the outward & visible.

Very truly yours

G Engelmann

My respects to Mrs Gray



Cyrnopteum

may [illegible]

[illegible]

[illegible]

[illegible] 1854.

My dear Porter

Your of Jan 9th came about two weeks ago, I deferred answering till I could give you an earnest that I have begun to work again a little. I include for N. Wrightiana Portulaceae & Linaceae — of the former I have doubtfully put Talinum as synonym of T. mantiarum — but I am rather inclined to consider it a distinct species — do as you please about it. — I should have given a short review of all those species belonging to Linum is, which are known to me. I doubt whether Planchon was always correct. The stipular glands are not absolutely characteristic. L. scottii is a good species, and you were right in referring L. rupestre very near it. — The distinction between L. rigidum (I have specimens from the upper Missouri in Hooker's collection) and L. lewisii is after all not very satisfactory — but I have no ripe capsules of the former to compare. My L. pubescens (N. Texas, young L. berlandieri is 3 times as the difficulty, it appears to be as different from L. lewisii as this is of L. rigidum — and the distinctive characters are as minute. — The question is whether the minute differences in the structure of the capsule and especially the false dissepiments constitutes specific differences. — N.B. L. pubescens is only a var.

Linum is always I believe said to have septicidal capsules — that is true to some extent, but in some species (L. berlandieri) only the false or rather secondary dissepiments are split in others (L. rupestre, where both kinds are split) and therefore the capsule appears to burst the secondary separate more and deeper than the primary dissepiments.

About New year I sent to New Orleans three boxes to you as already notified to you — 1 a box with the sets of Fenders Chagres plants, big Buck seeds, woods, etc. 2, larger box with [illegible]

with the balance of his Santa Fe Plants; some N. Lindheimeriana — and the whole of Greggs collection from Mexico to Magallan.

3. A box of seeds from Riehl for Hooker. —

The first of these boxes has been lost between here and New Orleans. — The Fendlers complete catalogue was in it — I retain a complete set, № 1, № 4, 5 and others. I did not retain a correct list — but by giving me a list of the sets of Chagres plant in the other box you will enable me to judge what all is lost. — Sets № 2 I retained — № 3 was sent to Hooker in exchange. — If I could be with you I would willingly relinquish my set to Hooker or any one who should make better use of it than I can — I took it more as a help to Fendler (poor man he is dead) than from mere love of these tropical plants.

Greggs catalogue was unfortunately retained here but I shall send it to you by express with the seeds for Hooker and the new N. Lindheimer 1850 which contain a few fine things, for example a new Jiqyphus, a new Celtideous genus (also with Lindheimer & Gregg's collection); Acanthocelltis (if not named before) a new Colibrina, Schinopsis etc etc. —

Wright is with Lindheimer teaching school — Nacogdoches — they appear to like one another well.

I am very glad you got so well over your accident — and hope that by this time you are entirely restored. —

Don't forget to look at the European Polygalas &c. &c.

Among Greggs Plants you will find a new species, or genus — Guaiacia angustifolium

Reganum Mexicanum I have examined years ago — but could not well find its distinctive characters, my specimens being incomplete — the second american Rubiaceae !!

Greggs Menardia I had also looked at but did not know where to place it — a queer genus. — D. Wightii you had sent me; Adolphia & Chitosphila & Petenia I have not.

You had from me for England N. Lindheimeri — sets № 4. Webb, 30? Boissier, 2 Fielding, 3. British Museum 17 J. Watson Taylor — 31. 32. 33. 34. 35. — Not knowing how many have been sold I have drawn on your Cor. Cunningham only for £100. — till you give me further advise about it.

Sell Lindheimers plants which will not go off at former prices as low as $5.00 at Fendlers at 5 or 6 (if you take them for yourself at 5.) I have also taken a number at that price, and ~~sent~~ am sending them to Ledeboer, Grisebach, Schultz, Frankfurt, ——

Lindheimer has also sent a fine collection of seeds by Capt. Coe. I did not send you and Cooke your shares — the same with seeds — your share I shall send to Boston. Carlin has [illegible] season.

My account with Hooker is somewhat confused I do not know exactly what seeds etc I have sent him nor what he has paid — I suppose I must commence a fresh account & not make bad worse.

I had a letter from Hengl the other day. He says that various misfortunes have cost him; deaths in his family, the loss of his great fortune by the "diabolical rascality of his friend of 20 years standing, Fiedler". —

I supposed Hooker had all my Texan Cactae — has he any opuntias? They are very fine; and I hope to be able to propagate them and send young ones.

My last letter was addressed to Brown Shipley & Co to whom also the boxes have been sent. — The two were retained in N. Orleans in hopes of recovering the lost one, but I have now sent orders to ship them at once and send the other when found.

My best thanks to Sir Wm Hooker and to Mrs Gray — [illegible] when unable to write yourself.

I hope to hear soon that you are [illegible]

Very faithfully yours

G. Scott

Via New York or Boston PAID
& Liverpool Steamer

19

Sir Wm Jackson Hooker
for Prof A. Gray
Royal Botanic Gardens
Kew
England

BOSTON

Note to 332.

Polanisia trachyspermа Torr. & Fr. The seeds of this species as well as those of P. graveolens Raf. are beautifully reticulated before they are ripe. When fully ripe they are in the southern species more or less tuberculated, and in northern rather smooth. There appears to be a slight difference in the shape of the seed.

Those specimens of 332 which were collected near the Colorado River, have a stipe to the pod of about 2 or 3 lines in length which I have not observed in any other specimens, with the exception of one from northern Mexico sent by Dr. Gregg. No other difference discovered.

Note to 579.

Talinum aurantiacum was also collected by Dr. Wislizenus in the Jornada del Muerto in New Mexico. His specimens are erect, and the leaves narrower than in the Texan plant. — Farther south he found another species, nearly related to this:

T. linearifolium n. sp. caule erecto, ramoso, foliososo; foliis linearibus, elongatis, basi attenuatis, carnosis; pedunculis axillaribus medio articulatis, bracteolatis sub-trifloris; sepalis 3-carinatis, ovato-lanceolatis, longe acuminatis.

Carizal, 150 miles south of El Paso. Beginning to flower about the end of August. — My specimen is about 15 inches high, with erect branches; leaves 3–4 inches long 1–1½ lines wide; peduncles over an inch long, pedicels somewhat shorter. Flowers "red" larger than in the former species; sepals about "5 lines long.

Gray

I feel pain & sorrow you all so [illegible] I
do [illegible] since I wrote to Mr. Buckingham
I now find — & that it was [illegible] = [illegible]
[illegible] the Astragalus arenaria, [illegible], pauciflorus
[illegible], trichocarpus with its setiferous stipules
I have a specimen of all modes of [illegible]
with 2 flowered racemes — and [illegible] one flower
Not poison (sir) quite but seeds [illegible] fundamentally [illegible]
with stouter & not stem [illegible] 1 & 2 [illegible]
[illegible] 1 & 2 [illegible] — [illegible] all given by
[illegible] articulation and the [illegible] of ~~[illegible]~~
~~[illegible]~~ stipules against the way are [illegible]
— [illegible] the ~~[illegible]~~ seed in a [illegible] as [illegible]
[illegible] says so all plants [illegible] garden
and that may be a reason [illegible] flowers [illegible]
[illegible] exceptions, [illegible] [illegible] [illegible] principle.

In one of my power pots I had given
us Astragalus germinated, which may be nothing
but A. Nuttall. A. trichocarpus, but it was
always one flowered — I have collected
seeds. —

Artemisia? has also sprung up in the
pot of the New Mexican Cereus, gonorinus
and probably from seeds attached to the plant.
It is a perennial and has flowered for 2
seasons but appears to have died in this
winter.

I have at present nothing before me — about
Absinthe but your genera, [illegible] Tere
Artemisia proper is left out. my plant is
congener of A. serpyllifolia = [illegible] with 6 lobes
or = Mellania with entire petal or = [illegible]
with extrophiolate seed.

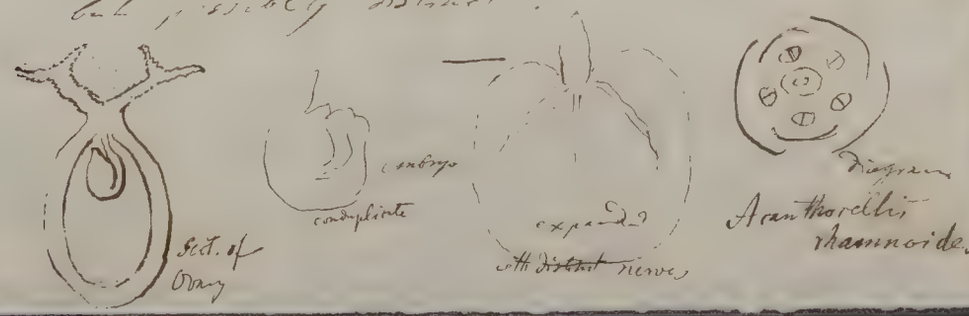
I do not see it described in Flora or —
DeCandolle and [illegible] it [illegible] here:
The Genera I have Consulted, expected you
to arrange that. Unfortunately I have
preserved only a very poor specimen.
The description was drawn up from the living
plant —

Arenaria ? incerta n. sp. perennis, caule flaccido patulo, nodoso, minute puberulo; foliis inferioribus obovato-oblongis superioribus lanceolatis mucronatis internodia duplo superantibus, glabris, margine (et saepe nervo subtus) ciliolatis; pedunculis in dichotomia ramulorum solitariis, internodio multo longioribus; sepalis ovatis, acutis, medio herbaceis, uni-nervis, anguste membranaceo-marginatis, subinaequalibus; petalis longioribus spathulatis, obtusis; staminibus 10; stylis 3 (rare 4); capsula ovata, calycem adpressum vix excedente, 3 valvis; valvis bifidis; seminibus paucis, lentiformibus, reniformibus, estropheolatis, nigris, laevibus, nitentibus.

Most probably from N. Mexico, and seed brought by Dr Wislizenus with a wrong name on account of the uncertain habitat. — R. May to Sept. 6. —

Stems 4–5 inches long, spreading with numerous sterile foliaceous branches at base; internodes 4–5 leaves 6–8 lines long, 1–1½ or rarely 2 lines wide; flowering pedicells 3–3½ l. long, in fruit ~~short~~ a little ~~large~~ elongated; flower of the size and appearance of that of A. serpilliflora; seed much like that of A. trinervia but estropheolate.

You have no doubt from Wright a Passiflora from Cuba, which is similar to P. foetida but, possibly, distinct.



St Louis April 9th 1851

My dear Doctor

My last letter is dated March 12th.

The box of Sandlers plants supposed to have been lost, has been found and sent with the others to Liverpool. – In a few days I shall send by express a small box to Boston containing 100 Lindheimers seeds for Hooker; a package of Pl. Lindh. for you and another one for Hooker, and a small package which I request you to send immediately to

Prof Alexander Braun, Giessen
Germany

containing also seeds and a few plants.

Lindheimer's plants of 1849 & 1850 have now been arranged by me, and I have come as far as Compositae (exclusive) in examining them; but as your stay in England is drawing to a close I will now without further delay only hastily look through the 25 bundles not yet examined and put out specimens for you with Lindheimer memoranda. Yeggs notes you will also find in the box, which I direct to Hooker. –

A few notes you will find included. Diptera appears to be a pretty and quite curious shrub; ripe seeds I send along (A full set of seeds goes to you to Boston)

Acanthocelties you must have met already. It appears to be slightly only distinguished from Celtis by the habit, by the bifoliated stigmata and the glomerate, not-single flowers if not properly distinct it must form a subgenus and ought to be named Celtis spinosa; the arrangement and position of the leaves distinguishes it also

Notes on other plants you will find on slips of paper with the plants themselves. Among the things which appear to me new I mention Corydalis cucullifera, Lepidium inderale Cassicarpum (is an L. inderale not distinct from the european species? – a western plant and certainly native!) Menthoxylon digynum, a shrub nearly allied with M. Canadense but very distinct. Rhus microphyllum, Colubrina stricta, Rhynchosia angustifolia, Astragalus Lindheimeri (near Mitchellianus in all its parts, very pretty). Melothria chlorocarpa (the

Gluteiton candidum a single specimen, evidently near your Dr Wright's and distinct. —

A character which is remarkable in the Rio Grande flora (extending as far north as N Orleans) is the commencement of Shrubby Mimosae and the reduction of northern trees to shrubby genera or species (Morus, Juglans, Cercis, Xanthoxylon, Celtis, and even Prunus) also Vaquéria; the commencement of the Chaparral country!

I have been very unfortunate with my Cactaceae all my best species, especially all those from Wright which had been coming on finely and many of whom were expected to bloom in a month or two were destroyed or very much injured by remaining covered with glass on a bright warm day last week. I feel quite disconsolate about it. —

I do not know what has become of Lindheimer. No letter since three months, while generally he is the most punctual correspondent. I am much afraid that he may have met with some accident; those roving Comanches have become very dangerous lately. —

Fendler is settled in Memphis Te; and is not near of any other collector, out this season.

Since Paul of Tarsus, a well known travelle is here, he had been up the Missouri 25 years ago, then over the whole globe almost and lately through Texas, western Mexico, California etc — He says he has made large and valuable collections, and is going now to the Rocky Mountains, and sent them home. I doubt him and am inclined to consider him somewhat of a Munchhausen, especially since he spoke of the Mimosaceous trees, the branches of which are as sensible as the petioles, and catch with their spines the unwary. I thought that would do!

Give my respects to Sir William, he and you may be assured that though I may be slow, I devote all my leisure hours to Botany. Ever very truly yours

G Engelmann

R. Wislizen

Eustoma Russelianum. α. majus; fl. majoribus, segmentis calycis subulato-aristatis, tubo corollae longioribus; laciniis corollae obtusissimis (Upper Arkansas, Cimaron, Seacoast of Texas) v. cuspidatis (Brazos, Industry, Texas N. Lindh. 274)

β. minus fl. minoribus, segmentis calycis subulatis, tubo corollae brevioribus; laciniis corollae acutioribus v. obtusissimis. Jornada del Muerto, N Mexico Dr Wislizenus. — [illegible] 1-1/2 inches long, corolla only 2 inches in diameter, lobes 6-7 l. wide, calyx 4-5 l. long. — In the larger variety the corolla has 2 1/2-3 inches diameter, lobes 9-12 l. wide, calyx 9-12 l. long.

Eustoma gracile n. sp. foliis basi sessili cordatis (nec connatis), oblongis v. lanceolatis acutis; pedunculis flore (saepe multoties) longioribus, calycis segmentis e basi lanceolata subulato-aristatis, tubo corollae longioribus; laciniis corollae obovatis acutis, tubum subtriplo superantibus; capsula semi 4-loculari.

Between Matamoras and Monterey, May and June Dr Wislizenus, Dr Gregg. — Root apparently biennial or perennial, certainly not annual; many stems from the base, 8-18 inches high, slender, producing flowers almost from the base, covered with very long (peduncles 5-6 inches) leaves 2-2 1/2 inches long, 6-7 l. wide, often smaller; corolla 1 1/2-2 inches in diameter, lobes 4-7 l. wide. — Easily distinct from E. exaltatum by the deeply divided corolla and the capsule which is the same as in E. Russelianum, and by the low stature.

Gentiana Wislizeni n. sp. annua, caule erecto, ramoso, foliis margine laevibus, imis spathulatis, superioribus e basi latiori sessili ovato-lanceolatis, 3-5 nervis, obtusis v. summis acutis; cyma contracta racemiformi; calycis tubo membraneo truncato, spathaceo-dimidiato (ad basin fisso), lobis herbaceis linearibus, subaequalibus, tubum dimidium aequantibus, corolla dimidia subbrevioribus; corollae laciniis oblongis obtusiusculis, fauce setis coronatis, tubo angusto obconico duplo brevioribus; ovario brevissime stipitato. (basi 5-glanduloso)

Mountains of Llanos, west of Chihuahua 7000-8000 feet high; October Dr Wislizenus. — Stems 10-12 inches high

strictly erect; leaves about 12 l. long, 3-4 l. wide at base. Shape of calyx approaching that of G. diffusa decumbens or still more of G. lutea, 2 l. long; corolla bluish white, 5 l. long. This species appears to constitute a peculiar section near Arctophila Griseb. but distinct by the spathaceous calyx.

Erythraea versicolor n. sp. annua, caule singulo s. e basi pluribus superne ramoso; foliis infimis obovatis, rosulatis, caulinis lineari-lanceolatis, acutis; floribus laxe corymbosis, pedicellis elongatis; tubo corollae calycem plus minus excedente, lobis elliptico-oblongis obtusis, tubo brevioribus; stylo-stamina subaequante, stigmate bilamellato; capsula oblongo-lineari, sub-uniloculari.

Northern Mexico, from Chihuahua to Monterey; Dr. Gregg, Dr. Wislizenus; in fl. from January to May. — About a foot high; flowers 9-10 l. long, 8 l. in diameter; capsule 5-6 l. long; stigma much larger than in the two following species. Corolla green about the throat, yellow above, rose coloured at the limb.

Erythraea floribunda Lindh. in sched. perennis (s. rarius annua) caule singulo s. plerumque pluribus, e basi corymboso-ramosis, subinde et basin ramulos steriles foliosos gerentibus; foliis non rosulatis, omnibus linearibus, obtusis; floribus dense corymbosis plurimis; pedicellis calyce multo brevioribus; tubo corollae calycem excedente, lobis oblongo-linearibus, acutiusculis, tubum aequantibus; stylo stamina elongata superante; stigmate globoso-bilobo; capsula lanceolata, semi-biloculari.

Rocky plains on the upper Guadalupe; June to August. — Frequently perennial, producing numerous stems from a very large ligneous root; sometimes apparently annual or at least flowering in the first season. Stems 6-8 inches high, flowers rose coloured 9-10 l. long, 6 l. in diameter; capsule 3½-4 l. ~~in diameter~~ long.

Erythraea Texensis Griseb. annua caule infra simplici, superne paniculato-ramoso; foliis non rosulatis lineari-lanceolatis, acutiusculis; floribus laxe corymbosis, pedicellis calycem subaequantibus; tubo corollae gracillimo vix calycem excedente, lobis oblongo-linearibus obtusis, emarginatis, tubum dimidium subaequantibus; stylo staminibus subbreviore, stigmate bilamellato; capsula lineari semi-biloculari.

Rocky plains near New Braunfels et, fl. June. — Always simple at base and annual 6-9 inches high; flowers about 7 l. long 3½ in diameter, lobes of corolla hardly 2 l. long linear and emarginate; capsule almost 5 l. long. — Though this species does not fully agree with Griseb.'s description, I suspect it to be the plant he had in view. —

Lindodon is common on the Lower [illegible] & is southeastern Illinois for there it appears to extend in a [illegible] through that state and into Missouri where it occurs near Cape Girardeau and I have seen it south of Greenville (on the St Francis river, on the way from St Louis to Little Rock), I have seen it near Vicksburg west of the Mississippi; but again at Natchez, with Magnolia grandiflora. I have been told that at Helena, Arkansas it occurs with the beech and with Acer saccharinum, which last is [illegible] in the South and [illegible] of Arkansas again.

The finder is colored very highly by our colored sailors; they get it from the [illegible] & from Cincinnati but have difficulty in obtaining as much as they want.

Magnolia glauca, with almost evergreen leaves I have only seen in southern Arkansas [illegible] south [illegible] where they named it "Sweet bay" (that I am not mistaken in the plant) & gave a few leaves only Nov. in Oct. or Nov. [illegible]

We have no Magnolias in Illinois [illegible] as I know. But the famous southeastern Kansas [illegible] is said to contain Buffaloes & Elk & this [illegible] is entirely unknown to me. —

I have seen a Magnolia at the Hot Springs again on the washits which I noted down as M. umbrella: young shoots from the base of large tree which had been cut down. 2–3 inches diameter, 20 feet high. Leaves partly 1½ foot long and ¾ wide, inflorescence & fruit [illegible] has leaves slightly pubescent on under side, [illegible] stamens. — I have no

[illegible] of the eastern, [illegible] or [illegible]

Olivia is abundant on the lower Ohio — I saw it little in Arkansas (northwest corner of state) I have seen it no where else — no where in Missouri.

Still doubt if it occurs south of the Mississippi and this western limit. — but I have seen it again near Caddo river in southern Arkansas (and it may occur in the whole south of Arkansas?)

This northwestern Arkansas and southwest Missouri — [illegible] in other respects too. The [illegible] rockies also there its appearance again.

It does occur further east, in this neighborhood — in Illinois it is an unknown tree.

Beech is found [illegible] on the lower [illegible] and again near Cape Girardeau Missouri, near Fredericktown (80 miles south of this) and [illegible] the only [illegible] of southern Illinois and southeastern Missouri. It is said to occur again at Helena Arkansas. —

Cypress, Sticks, Green flowers, Sly opens make their appearance south of the St Francis River. Alnus alata already so far south of St Louis.

Liquidamber common through Arkansas, Louisiana, also on the lower Wabash, southern Illinois, and to Fredericktown (twenty Iron Mountain Mo)

Hex opaca! from south — Missouri to Louisiana; Ottoga in the swamps of southern Arkansas it is seen 1½ feet in diameter — and 50 feet high. — There it occurs with Quercus virginiana (called there "Laurel")

Chinquapin chestnut occurs there too as a large tree 3 feet in diameter — I have not seen it in Missouri (except southwest)

The fan palm I saw south of the little Missouri in southern Arkansas.

Gleditschia monosperma on Red River near Natchitoches

By the by, are Quercus virginiana? is in its leaves and fruit more like your Q. tinctoria for which I formerly always took it. Leaves variable. — I have seen Q. virginiana from lake Erie and from Pennsylvania (Porter) which has smooth buds and smooth scales of acorn cup. and that is almost the only difference I can find.

1.

N. Wrightianae

Portulacaceae

1. Portulaca

* Spathulatae. vide N. Linh. p. 154. add: operculo capsulae sub-rotato: apice contricto seminibus unum plurave includente.

I said or, rather this remarkable and constant fact, but it occurs in the species of this section; European and American constantly.

No 21. P. retusa E. N. Lind p. 154 the long style and the winged seeds are decisive as to the identity of this species. The seeds are of the same size and roughness as in Lindheimer's specimens, but opaque, black, not grayish. The only specimen before me is a small erect plant without any flowers.

(B. incomplete specimens of P. oleracea from Europe show seeds even a little larger than those of P. retusa, and much exceeding those of our P. oleracea; might not this last be a distinct species? I have at present no means of a further examination, which ought to be instituted in living plants. If you have before you your figure in general or my character in N. L. and no fresh specimens in Hooker, Herb. of you could compare a living European plant you could perhaps show that "P. Americana" was a distinct species.)

xxx Portulacae

No 22. 23. 24 Port. pilosa L. I have before me specimens from 6 different localities from the Rocky Mts westward collected by Lindheimer and Wright. They all differ from one another in the size and appearance of the seeds and in the shape of the capsule. But these differences vary so much that ~~many~~ no distinct varieties can hardly be characterized. — In some the capsule is small with a long stipe, the operculum conic, the seed very minute and more or less shining with metallic lustre (Wright 23; Lindh. Texas 1844). In others the capsule is more than twice as large, operculum semiglobose, stipe very short; seed much larger and black and opaque (Lind 452 from N. Braunfels 1845; Bigelow 112, 1853) — Wrights 22 & 24 are intermediate forms with somewhat shining seeds of medium size.

2. Talinum

(see Muerto in New Mexico)

No 17. Talinum aurantiacum E. N. L. p. 153. — Also found by Dr Wislizenus in the Jornada

18. T. aurantiacum β? angustissimum radice tuberosa, caule herbaceo, ramoso, foliioso; foliis planis angustissime linearibus, carnosis; floribus axillaribus, singulis; pedunculis ad basin vel vix supra basin articulatis 2-bracteolatis, fructiferis reflexis; sepalis ovatis, cuspidatis, subinaequalibus quam petalis brevioribus; stylo stamina aequante, ovario vix longiore; seminibus ut in T. aurantiaco.

Very near T. aurantiacum, but perhaps sufficiently distinct by the narrow leaves (1 or at most 1/2 inches long) shorter peduncules which are articulated only about 1/5 of a line above their base; the smaller more membranaceous sepals, the short style (in T. aur. twice as long as the

ony and considerably longer than the stamina), and the smaller seeds.

T. linearifolium n. sp. caule erecto, ramoso, foliosa; foliis linearibus elongatis; basi attenuatis, carnosis; pedunculis axillaribus, medio articulatis bracteolatis, solitariis; sepalis ovato lanceolatis, longe acuminatis.

Parral about 150 miles south of El Paso; August; [illegible]. The specimen before me is 5 inches high, erect, with stiff erect branches; leaves [illegible] inches to a ½ – 1½ lines wide. Peduncles over one inch; pedicells 9–10 lines long; flowers apparently larger than in the nearly related T. sarmentosum.

19. T. sarmentosum C. in Pl. L. p. 153. [illegible]: bracteolis [illegible].

25. T. spathulatum n. sp. [illegible] (v. annis?) erecto, [illegible], foliosa; foliis carnosis, oblanceolato-spathulatis, breviter cuspidatis, in petiolum longe attenuatis. Ex [illegible] axillaribus bracteatis, laxe triflorus; [illegible] apicem in paniculam disposita, bracteis ovatis, cuspidatis, minutis, deciduis; floribus longe pedicellatis; seminibus nigris, nitentibus, tuberculatis.

Well distinguished from the nearly related T. sarmentosum by narrower spathulate leaves (2 – 2½ inches long, about ½ inch wide) by the short ovate bracts, the larger capsule and the very much larger seeds, which are much more distinctly tuberculate.

36 Your [illegible] is a very interesting plant — but [illegible] specimen much too incomplete to say any thing about it.

Linaceae

Linum: Dehiscence of capsule ~~[illegible]~~ splitting only or at least more readily the secondary (or false) dissepiments!

× Eremolinum

1. Linum perenne L. collected for the first time in Mexico, in dry valleys near Saltillo in Sept. 1848 by Dr. Wislizenus. N. Wright. Secondary dissepiments incomplete, with hairy fibres on the margins, much like Linum Berlandieri.

×× Linopsis

§. Pp. as 5-valved, secondary dissepiments more or less membranaceous, but entire; styles united above the middle, mostly to near the apex

Add to Linum Berlandieri pg 3.

♂ A smaller glaucous form with narrower more rigid leaves occurs on the ~~upper~~ ~~Arkansas and~~ the Cimarron in New Mexico (Dr Wislizenus and Mr Fendler, nos. 85) often only 2 or 3 inches high & much branched — stipular glands distinct; capsule quite note apparently near L. puberulum but the structure of the false dissepiments is decisive.

Dear Doctor examine the fruit of L. rigidum, the only I have not seen, and then decide about the identity of this species and my L. puberulum. I have arranged it among those with 5 valved capsule on account of its analogy — and I have no doubt I am right. All these species come very near but appear to me sufficiently distinct. — It is an interesting fact that united styles and 5 valved capsule and separate styles and 10 valved capsules should always go together. The united stigma in L. Greggii is a strange thing. You have specimens from me, as also of L. rupestre & L. cymulosum.

[illegible] sp. v. [illegible] radice [illegible] caulibus
elatis ramosissimis, foliis [illegible] rarius [illegible] glabriusculis, pilis ~~[illegible]~~
intra imbricatis, ovatis, linearibus, [illegible] nervatis, glandulis
stipularibus binis, sedibus calycem aequantibus v. superantibus;
squalis margine glanduloso-ciliatis, exterioribus 3 nervis;
filamentis basi dilatato-triangularibus edentulis; stylis usque
ad apicem coalitis; capsula ~~calyce~~ sepalis multo brevior, ovata
extiusculata; 5-valvis septis secundariis pene totis membranaceis.

Santa Fe, H. H. Cimarron River, Fendler No. 85

Stockton Mo April 28th 1851.

My dear Doctor

Only two weeks ago I wrote you extensively about many of Lindheimers plants. Today I drop you only a few lines to tell you that I have sent off to Boston a Box for you with seeds and plants. — Not knowing how to do better I have sent it to John St. Cunningham, requesting him to open the box and take out a package of seeds for the Cambridge Garden, then to close it again and forward it "to the Secretary of the Admiralty, London, for the Royal Garden"

The box contains 1, A package of plants for you, Lindheim Coll 1850, from Ranunculaceae to Valerianaceae every thing that could be of any interest to you; from there to Ferns almost only such things as may be of peculiar interest, with copy of Lindheimers Labels and some notes of mine. 2d A package for Mr Hooker Lindh. Pl. 1849 & 1850 Ranunc to Valerian. 3d A package of seeds for Hooker. and 4th a package of seeds which I beg you or Hooker to send immediately to Prof A. Braun, Giessen, Germany. —

A Letter from Lindheimer informs me, that he is alive and active, but stationary at New Braunfels. Wright was preparing to leave with a government train again to El Paso.

Lindheimer writes that for a year or two a Pastor Mentzel has been collecting pretty actively in his neighborhood and has this Spring returned to Vienna, where his parents may possibly find another Scheele !! By publishing rapidly you might obviate that.

Lindheimer gives a clear distinctive description of 4 Yuccas of his neighborhood — 1, fructu sub tereti carnoso; caule dato, foliis sub integris, vix serratis, rare subfilamentosis, elongatis

acutissimis; it is that I have named Y. longifolia — often 20 feet high, branched etc.

2, Y. intertexta (sole brevi) foliis inferioribus reflexis, superioribus rigide erectis, filamentosis; fructu pyriformi, sicco etc. Not knowing whether described, I have named it as above.

3, Y. tortifolia Linth. acaulis foliis rigidis semilatis, fructibus rostratis, etc

4, Y. angustifolia Nutt, from Galveston to N Braunfels — acaulis, sole subterraneo erecto e rhizomate horizontali; foliis angustis elongatis filamentosis, fructu triangulari — prismatico etc —

Nearly of all of them different. I understand that he has sent you to Boston specimens of each. I have written Mr Curtis about them, and hope he will pay a little attention to the different species in his neighborhood; so that the synonymy and distinction of species may become better claridated.

I believe I have mentioned that the 3d box of Plants sent to you several months since has been found, and shipped with the others to Liverpool. I hope they are in your hands before this.

In the box sent yesterday you also find the Catalogue of Greggs plants, which was forgotten to be send along.

After having been chained to my pratice in St Louis for eleven years I shall try to cut loose for a week or so and visit Cincinnati ~~and~~ to attend the meeting of the American Association.

I am going now at Cacti and shall send to you Mss as soon as done.

The included please to hand to Mr Williams.

I hope this and the box will yet reach you in time in England, and you will let me know, whether I can write again there.

Very truly

yours

G. Engelmann

Please look through the within bill, and if not perfectly correct, in charge for seeds or if some of it had already been settled, which however I dont believe, you will please alter or write a new bill — as if the form should not be correct; and you can receipt it for me

G E

Via New York or Boston
and Liverpool Steamer

Prof Asa Gray
Care of Sir Wm J. Hooker
Royal Gardens
Kew.

3 24
PAID

St Louis July 29 1851

My dear Doctor

Your last letter, dated April 16 I found here when I returned from Cincinnati. I had after 11 years of slavery in St Louis ventured to cut loose for 2 weeks in order to attend the meeting of the American Association. I was delighted in every way, delighted with freedom, delighted with travelling, with new scenery, and more than all delighted to meet old friends and make new ones. Among the former was foremost Agassiz; I was only sorry that he was so much occupied that I could not see him much in private — nevertheless we spent a few half hours together. He is a host indeed — a great acquisition for America — and will no doubt exercise a vast influence on the study of natural history in this country and be able to give it a higher direction and a wider field. — You (I don't mean to flatter) and Morton, who is unfortunately gone now, I have always numbered among those few working in the same field; but Agassiz by a happy combining several eminent qualities has gained a great and controlling influence which I hope will be very beneficial perhaps for generations to come.

I had been absent when the city was very healthy but soon after my return Cholera again began to prevail and ~~kept me~~ together with other diseases kept me extremely busy — day and night — during June & July sickness is now abating a little and I begin to breath more freely — if the hot weather does permit!

As to botany — I will only tell you that mostly I could not take my meals with my family, and that few nights only I remained undisturbed — Can you expect

any leisure hours then for botany!

Lindheimer continues to collect about N. Braunfels and finds a good many new things; among others 3 Monoecae not found by him before — a beautiful sarcostemma? with linear bastate curled leaves and brown flowers, etc — He has also abundantly collected the Dipterandra, but the complete flowers have 8 stamina. Correct therefore. —

I learn from him that his connections have extended to the Smithsonian in Washington and to Paris and Vienna.

I left of the Cincinnati meeting, among my old botanical friends I was pleased to get personally acquainted with Mr Lapham, and Dr Clapp. and was sorry not to meet with Dr Short, nor to find him in Cincinnati he living in the country. — Prof Bache, Henry and Baird Con. Wilkes are among those whose personal acquaintance I was happy to make. — Your name was of course frequently mentioned and it was a source of regret that you could not be there.

You know that Braun has a fine field now as Professor in Berlin in Link's place. He well deserves this.

Weissenborn has left his family for a while and has gone to California. I hope his tour will turn out to something for science, though money is now his object. —

I don't know whether this letter will yet find you in England, but I will send it any how. You must excuse haste and incoherence.

Hohenackers offer to Lindheimer were such, that L. after having begun to collect for him has given it up; he now says he can sell at that cheap price only 12 or 15 sets. — Lindheimer ought and must begin something else. — He

I was under the impression that the Chagres and the Gregg's Mexican Collections could be studied together with those of the Exploring expedition; or that some one of the english Botanists Bentham for example would take the matter in hand. — I am sorry that I had not answered you sooner perhaps you could have made some arrangement. I see well enough that you have no time to give to these things. — As it is I must be satisfied with any thing you may do or not do. — Fendler would be glad to get a catalogue of his Chagres Collection. — Greggs collection I will leave in the hands of any competent botanist, who will examine and describe them; and he may take of course any duplicates he desires (and there are many of them). — Will you study it yourself some later time, perhaps with Coulter's collection?

Before I had received your order not send any more parcels I had already sent Lindheimer's 1850 coll. and coll for Hooker and seeds, I have not been notified of their arrival, neither in Boston nor in New

Thanks for the Linum rigidum seeds — they are entirely satisfactory —

I enclose the curious Dipterandra.

Give my respects to Sir William and remember me if you please to Mrs Gray.

Very truly yours

George Engelmann

Via New York or Boston and Liverpool Steamer

PAID
24

Prof Asa Gray
Care of Sir Wm. J. Hooker
Royal Botanic Gardens
Kew
England

Shiawa Sept 18th 1851

My Dear Doctor

I just receive your letter of Sept 8th and write immediately to welcome you back to our side of the big pond! I am glad to learn from you that you are well and hearty and full of energy and enterprise as ever. — That was a bad reception Mrs Gray met with on her paternal shores — but this attack of cholera nursing no doubt went over without materially affecting her and impairing the good effects of her european tour. —

We are also well and hearty, and not affected by our excessive western climate, and immense floods of our rivers, by cholera, bilious fevers, dysentery and all the other enemies to mankind, which here make to many life a burden. ——

Your letter of April 16 arrived in due time but was answered only July 29 and my letter must have come to Kew after your departure, and will reach you probably with this — therefore I repeat nothing. — The letter from Paris, May 6th only came here 2 weeks ago! These are the only letters received from you this summer. —

Your Paris letter contains some statement of money received for Flandrian etc — — I had news of Brauns appointment in Berlin from himself — he finds a wider field there and better salary, will not be troubled with many minutiae and details which have taken away much valuable time.

I find it is useless for me to spend any time in studying Texan Plants, as I will always come too late, so with the Dipterandra and others. In my last letter I sent a better flower of it; it is B-androus! Lindheimer has collected it abundantly. — Seed was in the last box last spring!

I am very sorry about this box; the seeds were not off in good time for sowing, and should have been in Europe ~~early~~ late in May. My letter to Mr Cunningham indicating the receipt of the express office here was dated April 25 I never had an answer from him.

A few weeks ago I had a letter from Mr C.C. Parry, Sandy Hill N York — he was with Maj. Emory in lower California (Boundary survey) and received from him my detailed instructions as to Observations etc of Cactaceae. He includes a detailed description of 11 Cactaceae of that region; of which 7 appear to be new. A few days ago I wrote to Prof Torrey enquiring whether the english explorers Capt Beechy and others had collected Cactaceae there or whether any from there were seen in it. — All that I know of California — Cact. are those of Nuttall in Flora; Echinocact. viridescens has been rediscovered by Parry and very fully and satisfactorily described; but Nuttall's Cactus Californicus, of which you make a Cereus? or most probably a reflexiflor Opuntia; which I can not identify. — Prince Salm (have you not seen his Gardens near Düsseldorf?) described a Mammillaria Goodrichii Scheer from the island of Corros, California, which is very much like one of Parry's but if Parry's description is correct — well distinguished. Echinocactus californicus of European Gardens is too small yet (from seeds) to be described — and may be Nuttall's plant. — That is the extent of my knowledge of what others have done. Do you know any thing more — or can you find without too much trouble? —

I had also a letter from Wright from near El Paso and from his chief Col Graham. The first writes that he is sending a barrel of Cactaceae, that I should give the Col and the Boundary Commission due Credit and sell the specimens for his benefit. — The Col however writes that he sends a barrel of Cactaceae, wants me to describe them, send him the paper to be published in his report, and to hold the specimens subject to his further disposition. — What do? I should like to benefit poor Wright, but can hardly disobey the orders of his superior? — They have not received here yet. —

By the way, Linheimer writes me, that Friedel had brought home a number of small Cactaceae from the Rio Grande Country and that they have been discovered in Paris — it is necessary to be well posted up in these things — Do you know any thing about it?

As to Hoskins's account I think it best not to say any thing more about it at present; he may find all about it in his papers — and make it right. — The fault is to some extent mine, because I neglected to send regular accounts with each parcel of seeds, plants etc. —

You invite me and my wife to Cambridge — I should like to accept the invitation — as also one of Agassiz — but not yet! Last spring I for the first time in 11 years tore myself loose from here, to attend the meeting at Cincinnati, and though the loss in my practice was not considerable in a pecuniary way, my friends or clients did not like it at all and will not permit me to leave again here soon, at least not before I have been able to make other arrangements — — but come I will, if health and life is preserved. —

Give my best regards to Mrs Gray and also to Agassiz I had a letter from him a few weeks ago and am attending to his requests now.

Yours ever truly

George Engelmann

Nichl will come east in October

SAINT LOUIS MO.
3

Prof Asa Gray
Cambridge
Mass

of Th Kimm for $259.31. I have not added the $35 from Boissier because I would first hear from you, whether correct. — I can always by drawing on you or Cunningham receive the amount without deduction from Kimm.

If my notes are correct you must have the following sets yet in hand (you or those to whom you have sent them). — I include Boissier's noted above. —

N. Linh.	No 30.	$35.00	I did not know you
	31.	28.00	had No 40 which you
	33.	25.00	say you took yourself
	34	25.00	for Paris at $15.75.
	35.	25.00	
N. Fendl. N. Mex.	22.	23.60	
	25.	21.50	
	29.	19.10	

and the small sets sent to England last winter ~~spring~~,

I believe 14 in number.

N. Fendl. Chagres No 10 to 25.

Has anything of Th Pedroni appeared since the Nyctaginea vol 13, 1849 were published? ?

Will nobody describe Fendlers Chagres Plants? Or how can one get the names etc?

Answ. Oct. 21

St Louis Octob 10th 1851

My dear Doctor

All your letters have been received but probably a few days later than usually on account of the low stage of the rivers, — Your first was answered immediately and you must have got mine a short time after your last date.

What use to send by "express" if the seeds remain in a counting house in Boston?! how vexatious! —

Have the seeds in the Cambridge garden done well? — Did they get the boxes from Lindheimer last spring, and how do the shrubs etc come on?

Riehl left here two weeks ago for east and will see you and your garden; I thought an introduction unnecessary; if you should have any thing for me (from Braun?) he will charge himself with it. —

I have again asked Torrey for his Certificates from Emory (1846 & 1849.) but don't know whether he will send them; he might by Riehl also who will try to see him in Princeton. —

Is Emory gone to the Mexican Boundary again? The papers said he would supersede Col Graham there. —

You must also have got my letter of July — sent to England. —

I had several letters of Wright, the last August 16, Coppermines, — but the barrel and box of Cactis sent by Col Graham has not arrived yet. — Wright directs me to sell the surplus specimens for his benefit — Col Graham orders me to hold them all subject to his disposition! What does he mean? He must think them dried specimens! —

A Mr Parry of Washington C N.Y. who was with Col Emory near San Diego and had the

use of my very detailed instructions and directions about Cactí, examined about a dozen species very carefully, so that pretty satisfactory descriptions could be made from his very full notes; — I have sent him these descriptions. — —

I have told you before that all my Wright's Cactí (of 1849) and a good many of my best specimens of Wislizenus have been burnt up by the sun heat (and neglect). — I should not like to work them out, before I receive the promised barrel, which must contain many duplicates of the old species. —

What do with Gregg's Mexico — Mazatlan plants? — For the present you will do best to keep them safely at your place, till we can see what will turn up — or whether time will be left to study them by you, me or somebody else. — But label the packages well, so that in case of an accident, they could be easily identified. —

I hope your lost N. Wright. will be recovered again; it would be too bad, if that was not the case.

I shall work out Cactaceae per N. Wislizenus as soon as I get the barrel etc — or if you wish — immediately. — My time is still, late as the season is, much occupied and cut up by professional duties, so that often days pass without my being able to do anything else, — nevertheless I shall find time for Cactaceae

Give my best regards to Mrs Gray and to my friend Asa Gray

Ever faithfully yours

J. Engelmann

In letter dated Octob 16th 1850 you say that you have N. Lindh. No 3. from British Mus. £ 7.10
4 Webb 7.10
2 Fielding 7.10
17? J. W. Taylor 6.05
£ 28.10

In your last letter you say
Proceeds in my hands as per advice Octob 16. 1850
£ 21.00
for set of N. Mexic. N. to Taylor 6.17
— — Gamble 5 6
12 3
Commission off 1 4 6
10.18. 6

These 2 last items mean no doubt N. Lindheimer and not N. N. Mexic; and Taylor's set is the one mentioned above, where probably the commission had been already deducted — in that way the difference of 6.17 and 6.05 may arrise.

In your letter of Jan 29. 1857 you say that Boissier had paid you; if I am correct he must have got set No 30 of Nat Lindh. valued at $ 35.00 — which you have not accounted for in your last account.

Expenses deducted the account would come out then:

Fendler Chagres plants	$ 166.00
— — Santa Fe —	21.50
Lindheimer Texas plants	171.81
	$ 359.31
Due to Lindheimer yet	35.00

I think you will find that correct. —
I have yesterday drawn on you. — favor

Species? some of the new species — and to
[illegible] tested and distinguish
by their roots or bulbs [illegible] we distinguish
wear N Orleans.
If will have got the [illegible] to you to know by this
[illegible] and in question is in it.
I since know whether I shall write again to Hooker about
the price of seeds — by I receive from him some statement
where the account sent him last winter or spring; at
the time, that you thought or
[illegible] appears well pleased with
[illegible] etc.
Nothing up the Pa. R. from N Mexico yet. I have
not seen Conroy; he must have gone by San Antonio
— have written to [illegible] at N Orleans without
answer. — believe I told you that a
[illegible] of cacti sent from the Copperminds
not arr[illegible] with the
I hope your wife's health
improve as well as I brought it back from
[illegible] and you will not destroy it or impair it
by overworking

Very truly yours

[illegible]

Engelmann

Dr Letter dated Oct 16 1850 Dr Gray sends the following:

Copy of Howard's Memorandum Sept 28 1850.

Fendler Collection

N: 10	Received from Dr Lindley	$ 35	at 4/3	7.	8.	9
11.	Wolf	35		7	8	9
12	Dr. Mus.	34		7	4	6
16	Watson Taylor	29. 20		6	4	0
20	Boussieu	25 10		5	10	6
21.	Shuttleworth	24 50		5	8	6
			£	39	5	0
	Commission 10 p C			3	18	6
				35.	6	6

Paid per Dr Booth

Jan 24 1849	12	10	6
Feb 6 "	6	14	0
Paid Mr W Hooker for Carriage for Liverpool		17	0
Chapman for " "		6	
		20	7.6
	£	14	19 0

Lindheimer Coll

N: 21.	W. Gow Saunders $ 29	6 00
	Oakes, Shuttleworth	4 15 0
		10 15 0
	Commission	1 1 6
		9.13.6
		24. 12. 6.
	Now deduct the Oakes Coll.	4 15
	to Pay Engelmann	20.17.6
N: 20	Besides this I have for you Lemaire	6 2 0
N: 1	(for Lindheimer) Hooker	7 10 0
		£ 35 9 6 = $170

According to Dr Cunningham's Nov 1850 for $170 which were paid

(Boissier inv. a set of P. Fendler (No 20) as you will find on the foregoing page. — In your letter of Jan 29 1857 you say: "I wanted to tell you that I have got the pay for R. Lindh. from Webb & Boissier of Howard, deducting commission, the last I shall probably pay him, for he does little — and from Fielding direct, — — — I am writing here at Hooker's, while most of my Memoranda are at my lodging, — but please draw on C. A Cunningham for the whole amount of the sets yet due: Fielding Webb, Boissier, Dr. Meredith" — — whereupon I drew only for $100, which were paid. — You mention therefore Boissier twice in that letter.

[I see now that Stevens has 39 votes of
[illegible] has 0 votes.

as now in your hands.

22.

9

Nov 1st 1851

Linum Incrisata Planch in Hook Journ. but: not annual stem very gracile; fruit not described. The fruit in Seemann's plant is exactly like the fruit of L. Greggii but has no beak; it is tenpartited, and the false dissepiments are incomplete.

With the exception of L. virgin. which on account of its closed corol forms a distinct section of Linopsis all the northern Lina have more or less united styles. L. repetre is so far the only one with free style, in the fl. of U.S. But all the Mexican Lina [illegible] of them along here [illegible] L. Greggii, and all that Planchon mentions, with the exception of L. Drizabae. Planchon has evidently overlooked the fine characters of the capsule.

In a plant of the climate of Mexico I would not pay so much attention to the character of annual, perennial or even suffrutiose. Even in Texas some annuals tend to become suffrutiose or apparently perennial, Linum Berlandieri, Capsicum etc etc. Lantana Callicarpa etc.

[illegible] Dec 13th 1851

[illegible]

A few days ago I examined the Linum kindly sent by you lately; I made out a full description gave it a name etc, but when I compared Planchon I could not but doubt that it is his L. Incrisata more about it above.

Your letter of Nov 15 reached me in due time I am glad you found that [illegible] was correct. As to Boissier you will learn from [illegible] how matters stand.

The great Opuntia rec. by your garden from Lindheimer must be my O. Lindheimeri. If you have it, planted next summer in open ground it may flower (yellow with red base).

[illegible] preparing [illegible] with [illegible]

Seeds. I believe you got 80 packages last spring from Texas, which ought to bring $800 or as much as you think proper.

If you think proper I have no objection to your naming the plant Kadlera.

But if that Macrandria is not a distinct genus it appears to me to unite Macrandria and Lophospermum.

This remarkable new mexican Macrandria might be named: macrocarpa.

But the great news is the arrival of the Cactaceae sent by Wright — Pity that they were 1, collected in the season of their most vigorous growth 2, long on their way, 5-6 months 3, packed in half rotten straw and almost airtight in a barrel.

A good many, by far the majority are spoiled but many I hope to save yet. Among the number was one large Echinocactus Wislizeni but completely putrified — It must be a splendid plant. — Many of Wislizeni Cactaceae, some also of Wright's of 1849 are there, and a number of new ones — But which are those that Fremont collected on the Rio Grande? —

Wright wrote of sending seeds of Cactaceae but I find none! Do you get those seeds? if so you will oblige me much by letting me have them or part of them; if possible with the fruits. The seeds of the curious Cereus Greggii I have got from him in a letter, but if it is easy, post it to me —

Tell Wright that we have I got the Cacti. I shall write him soon also, but letters are so easily lost on the long route that it would be well enough to send the news in different ways.

I shall examine those Cacti and Wright's old collection soon. But it is much more difficult with Wright's fragmentary specimens without any notes. — Among his 1849 Cole are several flowers without any thing else — A description there is hardly possible — they can only be mentioned. — Lindheimer and Wislizenus have spoiled me in this respect, and Fendler also. —

I have not heard any thing further of Mr Parry (C. Emory's assistant at San Diego as whom I have 3 months ago sent a full diagnosis descriptions of his Cactaceae. I believe I have spoken of them to you already. He drew up very full descriptions so that I could readily identify or class his plants. What he has done with them or intends to do I do not know. I hope Emory will now do all he can to rediscover and identify his Cacti on the Gila, mentioned in his former report. By the way Dr Leconte of New York, lately from California has sent me some seed of Cactaceae — from his description it is quite certain that my Cereus gigantaeus is no Pilocereus, as was supposed by Hook.

(C. C. Parry, Sand Hill 1849)

Very truly

yours

I hope you will [illegible] me and heartily and not loose the benefit of your friendship. Give my regards to Mrs Gray

[illegible] Richl left [illegible]

SAINT
3

Monday Morning 4½ —

My dear Porter

After spending Saturday with Tommy and Sunday with Theodore and some German friends I have finished a proof reading etc. et tout le reste and have written a number of letters — (I can sleep on the steamer) — and have just written for you this article on the Cart. — which perhaps may be inserted yet. — Took your — excellent notes — thanks to you and Sequoyah for them — I shall not write now. — Mr Gray must excuse my wifing all the pleasant English epistolary display; I believe this has been a very English letter. —

And now then good bye — I have written to you about Bigelow, that I must leave my credit in your hands in that matter.

Ever truly yours

G Ringwalt

for Gray

C. Wright. 1851-52 No B. in fruit is a Cereus which I have taken for a peculiar form of Cer. dasyacanthus and named it S. minor. but Torrey has also flowers from Bigelow, which prove to be quite distinct; I have named it C. Roetteri

Now, don't you be scared, I have a second new species! Opuntia Pes Corvi Georgii LeConte. Florida. Chapman a very peculiar species small & neat, as pretty as an Opuntia can be!

St Louis Febr 20th 1852

My dear Doctor

It is a long time, that I last wrote to you; but unavoidable business has kept me from my correspondence entirely since New Year that is over now, and I have to answer scores of letters.

All your letters have been received and have always delighted me notwithstanding their brevity. I have likewise received the numbers of Plantæ Wrightianæ, and have read them through with great pleasure and interest, but you are working away with such industry that I am afraid Cactaceae will not be ready in time. I shall do what I can however.

Your letter containing Asclepias Vaseyi came to hand safely. The plant was not new to me, as I had received it almost 3 years ago from Mr Lapham, and had named it after him, though it was never published (as all my other numerous new species have not been — having been returned by you more than 3 years ago!) What do you say, will you send me your material on Asclepiadaceae and let me work it out (~~with those~~ for P. W.) and publish it with those enlarged figures ~~of~~ the flowers that you know. Or would it come better as a seperate memoir? — My materials are (as well as Euphorbiaceae) in such an ad-

varied stage that it will not be much trouble to introduce and insert any new species. — Cuscutae you must send me too.

My Asclepias from Raphan is the same as the specimen from Carey but has wider leaves and (one of my specimens) often 2 numerous lateral umbels. — Torrey's A. Meadii I have also examined.

Your monstrous letter containing all the Cacti came (wonderfully to relate) safely to hand — nothing broken or injured. I think it hardly necessary to send the full specimens here — but if you send Asclepias & Cuscuta you may just as well send the Cacti along. If some of them I have before me the living plants, for example the large Mammillaria which beats my M. vivipara from the same region, all hollow, as we say here.

My time will be a little less occupied from now to May, our most healthy season; and in these months I must do what I expect to do in Botany this coming year. —

Lindheimer sent lately in a letter the leaf and fruit of a shrub, which I can not make out at all. Do you know it? — Have you received it perhaps from Wright? — I include it herein & says: a much branched shrub, 10–14 feet high, looking like Cercis occidentalis; many stems, but not much branched. On rocky soil in thickets near the banks of the Upper Guadalupe. —

You name some of Fendlers Chagres Plants. — What has become of his Catalogue, which I sent with his plants to you to Kew. It was, I believe, intended for Hooker under the believe that he would (himself or somebody about him) name and publish Fendlers plants. If Bentham does it, he should have at least the use of the Catalogue which contains besides the localities & date some other interesting remarks.

Where is Agassiz now? I must write to him.

If Wrights plants are to be distributed I must have a set — if not, you can perhaps get for me some interesting specimens at least. — I include a letter from Wright, which he appears to wish I should send to you and Torrey.

He has unfortunately sent his Cactus (and other) seeds to his brother, who was to share with you. In that way I would get Cactus seed (if any) through the 3d hand! Some he sent me in letters by mail. —

If you learn any thing of these seeds, get me my share of Cactus seeds (if possible with fruit) for Examination and sowing.

Now a few notes on the Cactae you have sent.

1. O. fuliginosus not in the letter; in the barrel is my O. vaginata Wist Rep. (no doubt given "with big spines" and the true O. fuliginosus; whether both differ I am unable to say now.

2. & 3 Opuntias;

4 Mammillaria, I have it living 10 inches high, 5–6 in diameter

5. & 6 Cereus perhaps some of Wislizenus'

7 your „slender Cereus" is not in the letter, but is most probably C. Greggii Wislizeni, the only slender Cereus of those regions; I want the fruit badly — it is a singular plant; root turnip like, and fruit — if Emory is correct — very peculiar. I have seeds from Wright — a letter but no notice of the fruit. —

8. Echinocactus latispinus with near texanus but very distinct. — I have it also from Wislizeni; and numerously from Wright. —

9 Cereus! but not recognizable.

11. Cereus! not Echinocactus

12 Opuntia nearly related with elavata from Santa Fe and with some other received from Gregg and from Wright 1849 — a peculiar tribe.

Wright writes often, but has not at last dates received any of my letters.

M. Wright received down to Cassiceae page 60 I suppose you send it by mail to Wright — could you not also to Lindheimer? but that will be time enough when a volume is finished.

I have 10 or 15 months ago at Prof Grisebachs request sent to him some account of the doings of Botanists in the U.S. for his „Jahresbericht" annual statement, or account. — Are you acquainted with it? — I do not know whether I have said any thing about them before. — He desires me to request all Botanists to send to him publications, separate copies of articles in Journals etc. He says he has not received copies of M. Torrey nor M. Lindh. — He desires also copies of M. Wright —. Your Genera they have at the Library there „for us botanists it is well that booktrade is again looking up, and that one can roam about safely!" so he writes.

and now farewell
ever yours
G Engelmann

My respects to your lady

Send also the Proceedings of Philadelphia

St Louis Oct 9, 1866

My dear Doctor

I do not know what lazyness or rather apathy has come over me, that I have not written a letter for 4 months I believe. If my correspondents were not the best natured kind of men they would all cut me absolutely.

We have had a good deal of sickness lately in town and very oppressive heat so that luxuriousness were scarce and one did not feel like doing any thing, when they came.

Cholera, and Cholera infantum etc etc abates at most and gives me leisure as well as spirit to think of my too indulgent friends.

Some time ago Col Emory sent me Dr Parry's report on Cereus gigantea with the request to publish soon. I have therefore made up an account of this plant and added notes on the California Cactaceae, for Silliman's Journal I enclose it herein. I would not trouble you with it but I wish you would read it through and change the phraseology a little if necessary, and also insure the correctness of the printing. — See that I get a number of Extra copies.

It is unpardonable that I have not even acknowledged the safe arrival of your package, Arlequin etc etc sent six weeks ago; as also the big letter with Cactus seed. — How do the Cactus seeds with you? Some have germinated with me especially Cereus Greggii, some Opuntias etc. Many of Wright's Cacti and Cat's summer, are alive and can be described; some of the best species have gone dead. I hear nothing of him lately — probably my own fault — not having written to him.

I received your account of Bertoloni's plants this is much like Schelle !! Are Schell's would have

seen corrected in the same manner! Both Cuscuta verrucosa and pulvinata are no doubt = Cuscuta compacta Juss.
C. verruciflora is a more slender form (perhaps only younger!) which I have received from you as collected by Dr Gates on Pinos Glober! and C. pulvinata is the form you collected on the Mountains of N Carolina! possibly only differed from the other as being older, collected a month or two later! — The „hippostamineis" is a good one, = horse-stamineous; but even hypostamineus would be a vox hybrida, ought to be hypo stemoneus or something like it!

The descriptions show a want of knowledge of these things, as they are very verbose to very little purpose.

Not knowing Kunth's account of Menodora to be incorrect I of course found our Bolivarica generically distinct. But it may be as you state, and if Gregg's species No 44 of which I have sent you a specimen, is really Menodora helianthemoides, then all doubts are solved. But it appears to me that it might be a sp. n. and I have named it M. thymifolia. — The other plant of Gregg, No 527 has seen — certainly distinct for M scabra. I have sent you only 527 which I believe has no seed, but No 498 has ripe seed and leaves no doubts. I inclose a fragment of 44 and seed of 498, together with a description. Please compare 44 with Humboldt's figure and Coulter's specimen, you can then decide. The colors of Coulter appear acute. — Men. scoparia breaks a little into your arrangement, because the calyx is 5–6 parted.

You may send my notes as an appendix to your to Silliman Journal, if you think proper.

Dr Dreis has no doubt delivered to you before this 2 packages of seeds for you and 2 for Hooker, which please forward, from Lindheimer. Also his plants of 1851, among which a few interesting things, especially fine specimens of Fendlera. Dr Dreis is a worthy and scientific man, and deserves your friendship. He also sent the flowers of that fine new Styrax (and by the other

On the 27th I find time to continue! Thanks for your laborious copy of Bentham's names of Mr Fendler. I have sent Fendler a copy. — NB. You should send Fendler a Copy of Mr Wright's. — Direct: A Fendler, Memphis Tenn. He deserves it.

Tupeia from New Zealand, with regular anthers and filaments and (probably) numerous ovules can not be identical with Monadenedon I think.

I should pay Wright something for the seeds and plants I receive from him and the duplicate Cactii which I expect to retain and distribute, as Col Graham has permitted me to do. — How much? and how good to him through you probably? — Don't forget me in the distribution of Wright's plants. — Do you or Lowell want any of Wright's living Cactii? I shall send some to Prince Salm, perhaps to Berlin? to make some income for Wright. —

I was delighted to learn that you will now continue Flora! It is a great desideratum! I hope you will have leisure to do it. —

Any news in the botanic world? I hear nothing, see nobody; have neglected all my correspondents even Braun and I am afraid they repay me in the same way! —

Among the few plants I cultivate from seeds sent by Wright and Bigelow, (besides Cactii) is a Datura (D. Metel?), a Solanum very near tuberosum (sent also by Fendler) a Cuscuta, which flourishes on Portulaca, Menodora etc. —

I close, my dear Doctor with the best wishes for you and yours, and with the best promise for the future from

Your own
George Englemann

St Louis Sept 1st 1852

My dear Doctor

yours of July 28 reached me in due time and the letter of Aug 25 to day. I learnt a few days ago that Dr Dreis had been here again, and has now returned gone north. I am much disappointed in his not delivering his seeds etc. I shall make enquiries to day; and trace up the packages if possible. —

Wright has been here the latter part of 3 days — Sundry we partly lost probably by some misunderstanding respecting his supposed religious scruples. But I have got a great many Cacti from him and I believe all the information he was capable of giving me. He appears to be a good fellow and zealous collector. It will be well for him to be with you and then botanist some time. It will enable him to observe more in collecting. — I like him much.

Lindheimer had been sick with Cholera and lost two children — is to edit a German paper — and probably can not do much more for botany.

Your „Echinocactus" with the splendid rose colored flowers is an „Echinopsis" characterized by the disposition of stamina, which you noticed; — and distinguished by that from Cereus; with Echinocactus it has only the shape in common. It is probably E. multiplex Jurr. see figure in

bot. Mag. t. 3789, E. oxygona Jacq. appears to be near it; see Bot. reg. t. 1717. — We have another white and nocturnal species here frequently in flower E. Cyrtiesii Bot reg. 1707 & Bot mag. 3411. — I should like to have a young one of yours and can send you if you chose specimens of E. Cyrtiesii. Is yours also a night blooomer? All are from Southern Brazil & La Plata

I see in Pill, Journal which I receive today, a notice of: Torrey, Plantae Fremontianae — Is that Smithsonian? and does it comprise all, also the [illegible] species, [illegible] etc?

So you have not been in Cleveland; Wright was too late for the meeting there. —

I have been quite busy in the Summer, had a good [illegible] of Cholera too; but pressure of several causes my practice is diminishing a little; in one respect I am rather pleased with it, as it gives me more leisure — in another I dislike it, because it will remove still farther the time, when I shall become able to give it up entirely.

Euph. commutata I named the American Peplus, annual or mostly biennial (sometimes perennial?) growing in very rotten woods, ravines etc rarely if ever on cultivated soil. I have it from Virginia to Kentucky & Missouri; very distinct from E. Peplus, which has the cocci of the capsule 2-cristate! very small and differently marked seeds etc.

I had long prepared a monograph of our Euphorbias 1848 but some how or other — I think by your advice, deferred publishing it, and have been in that way been anticipated by Scheele and shall be by DeCandolle & others. — Has Scheele published anything more?

I know of the Peplus tribe besides Peplus which does not grow here (cast? introduced?) 5 or 6 species; 2 Texan descr. by Scheele, P. comm., one coll. by Fendler and one from Georgia, All have sculptured seeds

Mr. Emory has been very liberal towards me — requesting me to accept a full set of Cactaceae for myself; the other set will be sent to Washington I suppose and the others distributed by me, when I suppose I shall have to send them to you, Hooker and Salm. Will Lowe want them too? — Though I don't know yet how many sets can be made, as many of the plants are damaged, many dead; some very peculiar species of Echinocactus are all dead. I want all the flowers Wright has collected — he says Torrey will have them in hand but hope to get a loan of them for a full description.

Your arrangement of botanical mss. I like well and shall adopt; but will the printer stick to it?

I shall want by and by, when they are large enough to bear transportation, specimens of your Cacti raised from seeds. Wright has been rather careless in his seed collections,

with in plants of such slow growth as the Cacti, is disagreeable. We hardly ever know which is which. —

Stone pipe, Minodora I can have no doubts; the sepals and Calyx are divisions and can not be altered however stunted or altered the plant may be — but Pipe plant is said to be 2 – 3 feet high, and not crippled. — No 44 is a small scrubby thing and very different from 527 and may be the old "Humboldtii" plant. I dont see any thing to change my views.

I have written for the new vol of DC but have not seen it yet. — meteoric?

Is that Datura perennial? Mine will not flower this year. — among other things I have in flower Cassia wheat I take to be umbellata from El Cass on Portilla — very rich — and a California to me new Euphorbia tripolata. —

Nothing more about Fendler's Plants in England? Names or Sales?

I was looking for a few flowers of the Sycamore platanifolia yesterday. I thought I had but can not find them. I have wood of the plant and fruit and leaves in last falls coll.

I expect to get a very small coll. of Lindheimer next winter, and then distribute his collections of the last 3 years. —

Wright has brought about 8 Echinocacti 12 Mam. 12 Cerei 10 Opuntias, 42 spec; half of them new i.e. not described, some of these received before. Cereus greggii is a queer thing with its big turnip shaped roots.

Write soon again and I shall try to be a better correspondent than I have lately been.

Yours ever

Geo. Engelmann

I shall send a short notice of Cactaceae to Silliman direct.

100 [illegible]

Further notes on Cereus giganteus [illegible] California and a short account of some allied species [illegible]

by Dr George Engelmann of St Louis, Missouri.

Specimens of flowers and fruit, [illegible] with [illegible] drawings [illegible] Mr Prof. Thurber, and specimens of wild & the plants [illegible] Dr Gray enable me to perfect the history of this [illegible] Cactus. Mr Thurber travelled through the Gila country and Sonora as one of Mr. Commissioner Bartlett's party in the summer of 1851, and is believed to be the only scientific person [illegible] the plant in question in flower.

Cereus gigantei, [illegible] erectus, obtusus, simplex s. parce ramosus; ramis paucis erectis candelabriformis, caule cylindrico versus apicem sensim attenuato brevioribus, vertice applanato tomentoso; costis ad basin caulis sub-12, versus apicem 18-20 modis obtusis (vetustioribus ad caulis basin obtusissimis) subrepandis; sinubus ad basin caulis latissimis, versus apicem profundis angustioribus, [illegible]; areolis prominentibus [illegible] albido-[illegible]; aculeis rectis basi valde bulbosis [illegible] angulatisque albidis demum cinereis, radialibus 12-16 imo summisque brevioribus, lateralibus (praecipue inferioribus) [illegible] ibus, subinde cum aculeis adventitiis [illegible] summo areolae margine adjectis; aculeis centralibus 4 robustis albidis basi nigris apice rubellis demum totis cinereis, 4 inferioribus decussatis quorum infimus longissimus robustissimus deflexus, 2 superioribus lateralibus brevioribus, floribus versus apicem caulis numerosissimis sparsis, tubo [illegible] petalisque patulis [illegible]; [illegible] ovato sepalis 25-30 squamiformibus triangulatis [illegible] in axilla [illegible]-villosis [illegible]; sepalis tubi sub-30 orbiculato-subtriangularibus mucronatis, inferioribus in axilla lanigeris, superioribus nudis, sepalis intimis 10-15 spathulatis obtusis carnosis (pallide viridibus albescentibus); petalis sub-15 [illegible] obtusis integris crispatis coriaceo-carnosis crassis (flavescenti-albidis); staminibus numerosissimis, filamentis superiori tubi parti adnatis, inferiore nudo; [illegible] stamina paulo superante, stigmate multifido;

a sec This item ... New Series Vol XIV pg 2 Mar. 1852

bacca obovata squamis [illegible] carnosis minutis ad axilam fulvo lanatis stipata, perianthio [illegible] carnoso demum (3-4 valvis) reflexus, tenuis [illegible]. [illegible] numerosis in pulpa saccharina, nidulantibus obliquo obovatis laevibus [illegible] exalbuminosis; [illegible] cotyledonibus foliaceis incumbentibus hamato.

This species ranges from north of the Gila river [illegible], to within 20 miles of Guaymas on the [illegible] gulf. [illegible] doubtless also occurs in the Provinces of California [illegible] where [illegible] in his history, published about 100 years ago, [illegible] the [illegible] of a great [illegible] forms an important article of food to the natives of the eastern coast and that the [illegible] time was a season of great festivity.

The flowers are produced in May [illegible], and the fruit ripens in July and August. Mr. [illegible] the last flowers and the first ripe fruit in the beginning of July. He has collected abundance of seeds and will be pleased to communicate it to those who take an interest in the cultivation of this [illegible] plant. The stems [illegible] were 3 or 4 feet high with narrow furrows and [illegible]. The smallest flowering plants were about 12 feet high and the tallest specimens [illegible] to reach the elevation of 45 or 50 feet.

The ligneous fascicles correspond with the intervals between the ribs and not with the ribs themselves [illegible] Perry has quite satisfied himself and which indeed is the case in all [illegible] Cereus. From between these bundles ligneous fibres [illegible] towards the ribs and especially to the areolae.

At the [illegible] stem the ribs [illegible] are obtuse with wide shallow intervals; upwards the ribs are somewhat triangular, rounded or obtuse with deep and [illegible] grooves between them; towards the top of the plant the ribs are equally obtuse but quite compressed and the grooves deep and narrow.

The areolae are elevated, are 17 lines long, nearly 6 in diameter, about an inch distant from one another, [illegible] closely approximated [illegible].

Lowest and upper radial spines 6-12 lines long, sometimes the upper ones with a few additional shorter flexuous setaceous spines; lateral ones 1-12 l. long, the lower ones longest; the 4 lower central spines ~~decussate~~ straight or very slightly curved downwards 20-30 lines long; the 2 upper central spines 15-18 lines long. The strongest

Nov. 52.

spines ~~have~~ are one line in diameter. Their ~~bulbous~~ bulbous base being fully twice as thick. The old spines together with the hole areola readily come off ~~together~~ in one bunch, but generally the 6 central spines fall off first leaving the remaining ones appressed to the stem, till finally they also fall away.

The flowers are produced near the summit of the plant, but not on it and the fruit is seen usually 6–12 inches from it.

The dry flower communicated by Mr Thurber is 3 inches long but the drawing represents the flowers as fully 4 inches in length and diameter. The ovary in the dry specimen is 3/4 inch long, the lower naked part of the tube 1 inch, the upper staminiferous much widened part 3/4 inch long. Upper sepals fleshy, greenish white 3/4 inch long, below 2, above 4 lines wide. Petals of a light cream colour, 1 inch long, 6–7 lines wide above, very thick and fleshy and very much curled. Filaments light yellow, adnate to the upper half of the tube; anthers 0.8 to 0.9 l. long, linear, emarginate at the base and apex. Style not seen; the drawing represents the numerous (15–20!) stigmata as 1/2 inch long, slender, of a green colour. The flowers appear to be open night and day, and partially for several days in succession.

~~Berry~~ The fruit sent by Mr Thurber (in alcohol) is obovate 2 1/2 inches long by 1 1/2 ~~wide~~ in diameter, beset with about 30 scales and with short brownish wool in their axills but entirely destitute of spines. Mr Thurber informs me that this specimen is unusually long. The fruit, he says, is usually 2 to 3 inches long by 1 1/2 to 2 in diameter; the color is green, reddish towards the summit; the remains of the flower have fallen off leaving a broad and convex scar. The pericarp has the hardness of a green cucumber, somewhat softer towards the apex, about 2 lines thick; it bursts open on the plant with 3 or usually 4 irregular intensely red valves, which spread horizontally and appear like ~~representing with their red inner surface~~ a red flower when seen at a distance, which may account for the report of this species having red flowers. The crimson-colored rather insipid pulp of the consistency of a

fresh fig (separates completely from the rind and drying up from the heat of the sun) falls to the ground, or is beaten down ~~and~~ after it is collected by the natives and rolled into balls which keep several months or is pressed out for the thick molasses the saccharine juice it contains. The innumerable seed are 0.7 to 0.8 lines long.

Another, apparently nearly allied species was collected in northern Sonora. From the half of a flower before me together with Mr. Thurber's meager notes, other specimens unfortunately having been lost, I have ventured to make out the following description.

Cereus Thurberi (n. sp.); erectus, elatior, e basi ramosus sul. 14-costatus; sulcis parum profundis, aculeis brevibus nigricantibus; floribus tubuloso campanulatis virescenti albidis; squamosis sepalis 80-100 squamis carnosis triangularibus acutis imbricatis ad axillam villosis stipato; sepalis tubi inferioribus 24 lanceolatis acutiusculis axilla nudis, superioribus 20-25 orbiculato-obovatis obtusis; petalis 16-20 obovato spathulatis obtusis crassis.

Collected in June 1851 in a rocky cañon near the mountain pass of Bacuachi a small town on the road to Arispe, in Sonora; afterwards found with Cereus gigantens near Santa Cruz; it abounds also near Magdalena and Ures. Santa Cruz appears to be the northern limit of this species, which does not extend to the Gila river. — Stems 4-12 feet high ~~diminishing from the base~~ many from the same base, 6-10 inches in diameter ~~with about 14 ribs~~, sometimes articulated occasionally branching above, with about 14 ribs and shallow grooves. Flowers greenish white about a foot below the summit of the stem. Dried flower 2¾ inches long; tube narrower, more elongated than in C. gigantens; the globose ovary and naked and straw-coloured part of the tube each about ¾ inch long; free pack of petals of the same length, and 4 lines wide; anthers much larger than in the foregoing species, 1.3 to 1.4 lines long; style not seen. I have dedicated this

to the editor, Mr George Thurber of Rhode Island, an excellent botanist, who has kindly furnished me with the material for this paper.

Cereus Thurberi and C. gigantea appear to be closely allied species. They have tubed and erect stem flowers with short tube, half of which is naked — the filaments springing only the upper half of the tube; both have short fleshy sepals on the ovary, with short wool in their axils, without any bristles or spines; in both the petals are white, obtuse, and fleshy.

Both, and especially C. gigantea, stand very near the Pilocerei on account of the great height of the stem, the short cylindrical tube of the flower, and the thick petals; but they have not the least indication of a cephalium (or woolly head) nor of any particular development of wool, their flowers spring from the axils of the ordinary and unelaborate areolae, and the seed is quite different, at least from that of S. cereus senilis, the only species of that genus which has been well examined, I believe. These seeds are said to be obliquely thin-testaceous, densely dotted and to have an embryo with thick globose cotyledons. It is also said that the filaments of the flower cover the whole inside of the tube of the flower, and even the upper free part of the ovary. In all ~~considerable number of~~ the Cerei examined by me I find the lowest part of the tube free, the filaments being adnate to some distance above the ovary.

It is not improbable that the Chilian velvety Cerei (Velutini, Pr. Salm,) are to be classed near our species. The flower of that appears to be Cereus chilensis, Pfr., obtained near Valparaiso, and figured by the artist of the U.S. Exploring expedition, greatly resembles the flower of C. thurberi: it is a little larger, but has the same shape and the same closely imbricate sepals on the ovary; the tube has about 100 sepals, and the white petals are acute; ~~which flesh~~ whether fleshy or not is uncertain.

Sept 4/907

Albany December 3 1852

My Dear Doctor

Yours of Nov 20 received here on the 1st and today the package of fine well preserved and well selected plants, for which my thanks to you and to Wright. I wish to come to an understanding about what I owe him. I have got from you these 400, then a few weeks ago some more (Cuts & Cusseatte) and this years ago some of his new Mexican plants from you. He had also sent me unasked though without some packages of Texan plants, all near New Orleans — some good ones but mostly such as I have already received from Lindheimer, and offer a number of duplicates; I don't know how many specimens, never having counted them. In all these things I would pay no exorbitant price and wish you to arrange this matter with him — there is not with you the delicacy which would be felt in me and Wright. I would like to have his account before he leaves.

There is not much new addition in the Californian now, and I learn from Wright that Torrey has those Lobanos & Bigelow in his hands — I have asked Torrey several times before for Emory's California but he has never answered these questions so that I don't like to ask again. — It is so disagreeable to work with incomplete material, and it makes it so much easier and more satisfactory to get something complete. — Here I am perhaps days or weeks with incomplete material, which possibly with the additional one or in Torrey's hands could be

cleared up very easily.

I have now finished the Copy of my Memoir Class, and shall close Echinoracti in a few days — not hoping or waiting any longer for Bigelow's specimens — I shall send them on, before finishing the Calanus, which will take me the whole of December! You may rely on it that I work faithfully — but I can do it but slowly — being again more occupied by medical practice. I send the manuscript partly for the gratification of Wright.

If you can wait with printing till the whole is finished, you may publish it; I will however leave it with you, only copying a part of a letter received a few days ago from Emory. He says: "I hope you will make out a popular paper embracing a description of all the Crustacea in the region explored by us. I will furnish you with the best artist in the country to figure the plants and with every other facility necessary. I shall not hurry my report in any respect and shall allow no section of it to be published without passing directly under the eye of the writer."

Is this an instruction not to publish any thing previous to his report?? — Show this to Wright.

Send me — as you do often, prospectus of your N. W. Highlands. —

I glad Wright is in a good place again; pity however that he will be more at sea than ever — he must study those remarkable Algæ. [illegible] you advise to do with them. Where [illegible] in the Sea, la. a? Leave them there I suppose. —

In haste yours truly

J. Leidy

If you are likely to know more about Wright, whereabouts as I do, I enclose a sheet for him.

What has become of Dr Chapman? I do not get an answer from him.

Sitka Dec 14th 1852

Dear Dr Torrey

I have just finished the copy of first part of Cactaceae and send it without delay; 10 or 12 days ago I wrote to you copying a passage of a letter from Maj Emory. I don't know exactly how to interpret it and leave it to you. — It will take me 3 or 4 weeks more to finish Cactaceae; I must leave it to you, whether it would be better to publish now with your N. Mexican or whether we defer it till Emory's collection I understand is soon expected — I hear neither he nor Dr Bigelow — a letter from Dec 15 [illegible] of it.

[illegible] as complete as possible [illegible] the of Emory [illegible] as well as the [illegible] Bigelow says [illegible] he writes that he has written to Torrey to send his specimens to me, but have not [illegible] Torrey the [illegible] yet.

Dr Bigelow [illegible] genus Cactacea with the Cactus [illegible] — probably belonging to the Mexican genus Echinocactus. [illegible] see it

[illegible] all around. [illegible] to work
[illegible] and you will see [illegible] finished,
[illegible] [illegible] to make [illegible] to make
[illegible] good [illegible]

Very truly yours,

[illegible]

[illegible]

Alonzo Jan 11th 1853

My dear Doctor

Your letter written on Christmas came to hand a few days ago — and a long and full one it is, for which my thanks. And also my thanks for your care of my wishes and desires as regards Wright's plant. Wal as he has sent to me formerly some packages of plants from Texas (though most of them of not much value) I propose to pay him $100. and if you think that money is at present an object with him for his outfit etc, I am willing to furnish $50. easily for which he may return collections to be made during the expedition. But I must beg you to advance this money for about 4 weeks, when I shall refund it; This is the season (after New Year) to make out accounts. I bills & collect fees — a most abominable business to me — but also a most necessary one, which however has kept me from Cacti since 3 weeks, and will do so for a week or two longer. After that all my energies will be devoted to Cacti — Euphorbias and Cucurbitaceæ. —

Your proposition in regard to Lemuy Graham & Wright appears to me to be a fair compromise. The paper however should be published separately in the Sm. Contributions, I think so as not to offend either of the high contracting parties

but that may be left to future negotiation, as we are in no hurry about it; meanwhile I will publish with your pl. Wrightiana a full abstract, as you propose, of all new or corrected species. —

For that purpose I wish you to return to me the manuscript after Wright has looked through it and has made such notes and alterations as he may deem proper and necessary. I desire him particularly to examine the Introduction and revise it. — Has he seen Graham and conversed with him about the Live Oaks, which he claims? —

By the time that I receive the Moss back I will probably have finished the Cereei & Opuntiae and will be able to immediately return to you the whole abstract. —

I the full account if can use then the material which I shall receive from Torrey and that which Bigelow, Parry & Schott are still accumulating on the Rio Grande and hope also to observe many species in bloom by that time.

Have you at Cambridge good figures of Cactaceae in the Library, which an artist may study, so as to see how such things are best done — for it is not even the most skilful artist, who can do justice to such specialities without studying them, as you well know, I see the same in a full drawing sent me by Mr A Schott of this new Anhalonium — Singularly enough it is almost impossible for me to make out what he means, though the drawing is a good one!! — If Emory will furnish plates, they ought to be creditable.

I am glad you got the parcels from Doeis — what do you say about the new Styrax — is the form of the leaves so very different from all other species? I shall send specimens of wood of this species and of many others shortly for you, Lowell & England.

I hope Torrey sends by Express without any further delay — have not heard from him yet.

I shall soon write to you again, whether I can find an opportunity to ~~send~~ obtain specimens or whether you have to send by Express.

Wait a little with Howards plants yet — but if he can not sell, we will send them to Brown. I have had a long letter from him lately after long silence — he appears to be very busy and very much pleased in Berlin. But it will be some time before he can get things in such a train, in the Garden, Museum etc, as he wants them.

Do you know this willow of Lindheimers, which flowers in summer? —

I shall be glad to see the Charae and shall confer with Braun about them immediately. —

I was pleased to find your name on the title page of Silliman's Journal — but is it not the same case with you as to it? I see that you have too many irons in the

office" ?

How is Walpers Annales? apparently necessary to possess! I shall wait for the work; but he should be made aware of his mistakes or oversights mentioned by you in Silliman's journal.

Would it be possible for you to give a list of Sandwich (Hawaiian) plants as enumerated by Seman?

I shall soon write again, and expect soon to hear from Wright.

Very truly

Asa Gray

Anything you might have for me you can give to Little & Brown publishers Boston care of John Hale Esq. St Louis

Inquire here or if they don't see so that no time by long a delay occurs. Mail by way Cape also in future

Asa Gray

What is the work on northwestern forest trees to be published by you, mentioned in the annual report of the Smithsonian Inst. for 1854? Is it a sister work to Sargent's Silvics of North America? Tinctoria is confounded with gilva from Mr Porter which appears distinct but common is different from our plant, which therefore appears to belong to G. tinctoria, but mostly with more finely cut leaves, smoothness of scales of bud and of cup, appears also the principal difference!

Albany Dec 27th 1842

My Dear Sir

About 2 weeks ago I wrote to you a long epistle, which it is not necessary now to repeat. Please send the enclosed to Wright. — I have seen a new work I think you commend — Hanover by Seemann, the same who wrote of Harlaem now. I did not know he was a German. His fear of Germans is also admirable —

Do you know anything of the shameful treatment of Poe and of his life work? I believe you sent me some time ago a catalogue of his lectures, with your prices etc. His necrologies have been reprinted in extenso lately, and a number of friends have made a collection here and I have ordered some packages of his lectures if they can be got — have written to Brown about them. —

Perhaps you would improve if Little & Brown would book to the trade by sea — if so, either send the packages from S. Stevens if not forward by

Mr. Lewis
Cambridge
Mass

St Louis March 16th 1853

My dear Doctor

Included I send you a draft for $100 which please credit to Mr Wright for the plants which I have received from him lately ($83) and formerly ($17). Is he gone? Have you sent off the package for me, and how? I have nothing yet from Torrey, but have ventured to write to him again. Am I too much importuning him?

I have received several boxes of Cactaceae again from the Rio Grande, among them one put off in January 1852!! shipwrecked off Tampico, passed the summer in New Orleans — & is still alive, and among them a specimen of Frankenia alive!! —

The Chara from Ohio is the same as received then by Michaux and by Frank (see Pl. Lindh.) I shall have written to Hayden about it. Shippen is without [illegible]

Fendler writes that his business in Sonora is not good and he shall leave probably, perhaps for Nicaragua, — but is undecided yet —

I have been very busy lately in medical practice, and have not finished Cacti yet. We have had Scarlet fever here very prevalent and often fatal — has given me a good deal of trouble. So I have not much advanced in Cacti,

and shall probably stop entirely till I get Torrey's things. The return of the gentlemen of the Commission finishes the collecting business now for some years to come I suppose.

Many thanks for your new Plantae Wrightianae — I admire your industry without being able to imitate you. I ought never have been a physician or never a botanist. I wish I could work with you for 4 or 6 months — You would be pleased with me I think! And now again I get your Nyctaginear in Rillieuxia. Have you those of Wislizenus? he also has collected some new ones I think.

Has Graham got an appropriation to print his report?

I have packed two boxes with woods (from Texas and Missouri) for you, Lowell and Hooker. I intended to get them all in one box, but unfortunately did not succeed, so that yours are alone in a small box and in the larger box are those for Hooker at the bottom and Lowell's on top. The latter must be unpacked and Hooker's left in the box which has to be cut down or filled up — or they must be unpacked — I am sorry to give you the trouble. I am sending things to the Smithsonian soon and shall send these things along.

You have directed the New York Exhibition Committee to apply to me for woods —

I have none but such specimens as I send to you and they are good enough for a Naturalist but not for a show. So I have declined.

Lindheimer's Willow I believe is undescribed and I have provisionally named it Salix vitellina.

Late last Summer all our fruit shops and similar places all at once had singular vegetable balls of 1–3 feet diameter hung up like asparagus is often used, for flies — which proved to be Kochia dentata (Cycloloma) which opposite here had become accessible by the water and boys brought over quantities of this plant, which I had never before seen here for the great flood of 1844.

Notify me if you please of the safe arrival of this letter with the enclosed draft. My respects to Mrs Torrey

Yours truly

Asa Gray

(Copy of Gray
(Cambridge

If you know the name of any or few of Lindheimers plants, not named in my catalogue of woods, you may add them and also ~~tell~~ give them to me

30 Is that really C. ovalis, a large shrub or even small tree

61 Is the tree in our bottom woods as large as Cornus florida, with white berries and is it C. obliqua

78 [illegible]

86 The aromatic shrub sweet scented, often sent by Lindheimer

87 [illegible] shrubby Salvia, sent by him

88 Ehretia

89 Capsicum

91 Fraxinus

102 Celtis spinosa or my Acanthocelti — is the species known and named?

103 Crotonopsis, the shrubby one ~~with the small leaves~~ ~~there is another one in the herb. collect with small [illegible] and Crenate leaves~~, No 52 [illegible] N. Tex.

St Louis March 27 1853

My dear Doctor

Sent 10 days ago I wrote to you including a check for $100 for Wright.—

Yesterday I have sent two boxes containing 4 collections of woods to your address; they go from here to Pittsburg to the care of J. Peck & Co, who will forward them to Boston.

Box No 1 contains on top the Catalogues of the collections; then a set of woods which has no destination yet. As it is incomplete and some of the specimens inferior, I would put a higher price on them than 20 dollars, or perhaps less if you think proper. Perhaps some Botanist or some institution would take it; and if somebody would be induced by this to make a similar collection of your northeastern woods, I should be very much pleased.

The lower set in that box, separated by a strong sheet of paper from the upper set is complete and contains good specimens. I have destined it for Mr Lowell, and I think $30.00 are a fair price for it. It contains over a hundred texan specimens and [illegible] 50 from Missouri

Box No 2 contains also 2 sets the upper one for you which is complete at least as far as regards the more interesting specimens. It is a present to you.

The lower set is quite complete, and I have destined it for Hooker; I charge also 30 dollars for it.

Have you sent him the [illegible], you got from me last summer or fall?

I dont think that you need unpack it. You may fill up the space in the box by any thing you have to send and forward it to him.

I have not written to him since two years; I am ashamed to do it, but every thing will come right and Cacteae will turn up yet, especially since Wright collected such a fine addition.

I learn that Dr C Parry is to do the Botany of the Boundary Commission. How is that? —

I am now at work at Cacti again; the days are getting longer, the weather milder, and the City more healthy and I am active and hope to push things a little now for 6 or 8 weeks! Then the busy time will come again!

Very faithfully yours

G Engelmann

Torrey send me his compliments by Dr Parry — but not a word about Cacti!! However he had not had my letter then; with I hope to get answered in a week or so. over

Albany July 4th 1853

My dear Sister

[illegible] you [illegible] by silence! [illegible] that I am not [illegible] of other [illegible]

[illegible] Do write a long letter if [illegible] here. [illegible] this place? [illegible] California [illegible] people are more and more [illegible] would then we look at the [illegible] when!

I have had [illegible] here [illegible] such intimate [illegible] the Captain that he moved his tent [illegible] his baggage, [illegible] Other Officers [illegible] the flying messenger of the telegraph arrested them in their [illegible] of the Albuquerque! [illegible] he of me — and his visit to the [illegible] of New Mexico and to the region [illegible] eastern California will be productive of fine results for you and me. I hope — He complains that his [illegible] have been [illegible] — Tonight [illegible]

[illegible] brought and [illegible]
[illegible] end. — [illegible]
that you have given him [illegible] — [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] was preparing his [illegible]
[illegible] Prof Hall of Albany [illegible] up the
Missouri — No more of it however [illegible]
[illegible] to think of it — Agassiz [illegible]
[illegible] if you like. —
[illegible] to know what I have done
about since I wrote you last (about 3 months
since). I have been working [illegible] Cacti [illegible]
— have been assisting all the different [illegible]
[illegible] fitting out [illegible]
— in such a hurry in fact, that they [illegible]
[illegible] by Telegraph
(Gunnison to [illegible]) and had to take [illegible]
last any [illegible] for [illegible] they could find
willing rable to pack up at a moments warning
and go along with them. — I am pleased that
[illegible] Whipple secured Bigelow. — This
and my practice [illegible] is
increasing now (though the health here is better
than it had been since the cholera first made
its appearance 4 years ago) has kept me
even from attending to my regular correspondence
if the latter is not to some extent perhaps

owing to innate laziness.

The plants sent ~~by~~ Little & Brown [by you through] [illegible]
order, they are fine ~~but~~ will be [illegible]
[illegible] received by [illegible]

Dr Parry happened to be [illegible] by with
Dr Torrey came, asking for the Cacti. He selected them
for me, packed and sent them. They got here in good
order — and are many of them [illegible]
[illegible] — so the first specimens seen by me of
Cereus giganteus — certainly a <u>Cereus</u>!

I have Fouquiera alive (after 18 months boxing shipwreck etc)
it is already loosing its fasciculate <u>glaucous</u> leaves
again; — it has not put out fresh [illegible]
on young branches or seedlings, I suppose it would
be as certain [illegible] the spikes [illegible]
it for the fasciculate axillary leaves. [illegible]
hardly a doubt that they are of the same
character as the spines of [illegible], represent
primary leaves (and possibly as [illegible]
suggests originating from the midrib of such)
while the axillary fascicled leaves are the more
common on the plant (which do not form spikes).
Have you seedlings? my seeds from Bigelow
have germinated [illegible]

I can not retire from [illegible] yet but
the time will come — and if we both retain
life and health we may yet work
together — * but after being confined to
[illegible] life of
the life of a physician I must first (after

out of the [illegible] you ask in the plains and
mountains, and [illegible] again to [illegible] Europe
[illegible] then shall [illegible] my work Cacta-
[illegible] I have thought whether it would not be proper
for me to describe [illegible] [illegible] in the [illegible]
of the [illegible] [illegible] [illegible] [illegible] in one
two [illegible] [illegible] [illegible] [illegible]
[illegible] I should probably prefer to be
independent. —
[illegible] Emory [illegible] again [illegible] of
this [illegible] hateful spirit of [illegible] [illegible]
— [illegible] this spirit may have its [illegible]
or useful side. [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] that
otherwise. Emory [illegible] that [illegible] [illegible]
no appropriation [illegible] that [illegible] (J. E.'s friend)
in the Senate has killed it, a [illegible] dead
Emory, you know, is down again on the parties.
— Have you seen Grahams Report? High coloured as it may be it is nevertheless an exposition of miserable mismanagement!

[I] thought that your working out of the Explor. Exped. Botany would give you an opportunity to look into Greggs Mexican plants a little; at least so far as they are the same or near relatives of those properly coming under your examination. — [illegible] [illegible] among the Expl. Exped. coll.

I have long since written for the French work on Cactaceae, but have not yet got it. —

Braun has given me full accounts about [illegible]. — I have bought his Reprint and other papers in the same bundle, but have not got it yet.

to Page 2.]

[illegible]

[illegible]

[illegible]

Indeed [illegible] razorbiny [illegible] species of fish [illegible] in the neighborhood. [illegible] increases the [illegible] the [illegible]

Bedenders report is interesting. If he [illegible] Spine — [illegible] understood [illegible] Scripture

[illegible] & Amigo [illegible]

[illegible]

[illegible]

I have not made out a bill for Hooker, [illegible] get [illegible] the [illegible] the [illegible] for the Museum [illegible] take them. And if you or

[illegible] should [illegible] the [illegible] named [illegible]
[illegible] figure. [illegible]
[illegible]
[illegible]
[illegible] the [illegible] I may [illegible]
[illegible] that
[illegible] you think best. I shall [illegible]
[illegible]
[illegible].

I think it with you [illegible] the [illegible] of
[illegible] Stevens hand [illegible]
[illegible] be much obliged to you if you
[illegible] it so. —

[illegible] have to return the Crustacea [illegible]
and I am greatly ashamed of the whole business
but do not know now how to alter it —
I can not find time to examine and describe
them. — there is always something now
that comes nearer home, to prevent me.
These [illegible] Crustacea have kept me from writing
[illegible] but I have to do it.

Very truly,

yours

[illegible]

Mr [illegible] has been here [illegible] very [illegible]
a very pleasant and well instructed [illegible]
[illegible] respect to Agassiz [illegible] he
got his [illegible] etc safely? I [illegible]
heard from him since the Capt [illegible]

St Louis [illegible] 1[illegible]3

[illegible]

Dear Sir

Mr [illegible] Hermann [illegible] Boston [illegible] the [illegible] to charge [illegible] with the package [illegible]

[illegible]

Please [illegible] Mr [illegible] Curtis [illegible] No 37 Pearl St at E Arlington for the package

Mr [illegible] [illegible] Mitchell Amys [illegible] Boston [illegible] with Mr [illegible] Curtis [illegible]

[illegible]

[illegible]

St Louis July 28th 1873

My dear Robert

I am glad to hear again from you, and am much pleased to be able to give you some [illegible] of interest to you. I know you are very industrious, [illegible] [illegible] with [illegible] of industry [illegible] perseverance; the result of both is only partly explained and excused by your being cut up by professional calls etc. I try to reform if and be let for one!

I have had several letters from Agassiz since I wrote to you. His stay here was a pleasant and striking episode in the monotony of life here. Have you nothing to say to me here [illegible]?

I am glad you have [illegible] advancement of scientific [illegible] and their assistant [illegible] collections etc. [illegible]

I can understand Agassiz in his persevering misunderstanding — [illegible] something of the same [illegible] is popularly mistaken by correspondents for want of regard or attention, [illegible] [illegible] nothing but preoccupation with other things. [illegible] Agassiz [illegible] certainly not very commendable [illegible] but he certainly wishes to secure the priority of this discovery (or rather those made on them) [illegible] stated to me that he was sorry the collection did not all go together in your hands.

Do you mean by Torrey's O. Fremontiana published in or specimens? Some years ago I got a set of specimens for him, but no publication has yet come to hand. If you see Torrey tell him that I was much pleased and considerably furthered in my investigation by the Cacti Torrey had sent me many thanks to him. —

I commence to doubt the propriety of difference of Opuntia missouriensis & O. fragilis! They are entering very near. Opuntia seem to me worse than Rubus. Slipping (not equally true that in some respects) follows, which I hardly know how to distinguish at. So much worse as you can not have complete suits before you. Have you an Opuntia North? A specimen from the Potomac is apparently different from our common species, — and Op. macrorhiza I have now also from the upper Missouri! — Have you any Idea where North Pt. and Long. [illegible] 3 northern species (O. mesacantha, Kentucky, O. cespitosa Kentucky, O. humifusa) which I first mentioned by name only in a german work. — I have written for the new french work on Cacti many months ago, but have not got it yet.

My Fouquieria seed has come up again this year — as last year the young plants have disappeared again in a day!! My living plant makes no shoots but is covered with bunches of glossy green leaves in the axilla of the spines, — the great drought in June the leaves fell off & most all but after a few heavy rains in July the plant was in one night covered again with leaves! — In some days the impossibility which had lain dormant [illegible] leaves [illegible] remarkable. Dr. Wislizenus first stated to me, that after the drought of May — July in those southwestern Countries, the heavy rains of August set like [illegible] the whole country with flowers and green. — This like it appears to take place in Fouquieria. Fouquieria is remarkable in its growth. Lateral branches without axis the branches of which appear to grow and grow for years, leaving in the centre a linear lanceolate green bud, which in spring expands, to repeat continually the process; rarely and probably only at the top of the tree or rare branches a further growth, or initiation of a new axis takes place, — in my specimen not at all! I hope for it next year, when the plant, which has been packed up 16 or 17 months, shall have recovered. — In this peck shook only can we learn the nature of the spines! My dry specimens show young shoots. B. The seeds come up each time in a few days!

You invite me very kindly to please [illegible] very fast. Very but it does come so very fast nor fast enough!

I see a Prof. Heller of Italy has published a Leipzig Travels in Mexico 1845–1848, he was sent there as a botanist and Gardener, has collected much etc. — He must have got Cacti abundantly.

[illegible] day I thought the goodness. [illegible] would be [illegible] [illegible] [illegible] or something like it.

Keep the money for me in hand till we can regulate our money affairs. Again is also sending money here offering; so it can go together. I am sorry to hear that Sprague is feeble — you can not spare him.

Could you use Fendle, and disinterment plants at 6.00 and 5.00 a hundred? or say both at $5.00? If so I think I ought to let you have them — better so than laying about uselessly.

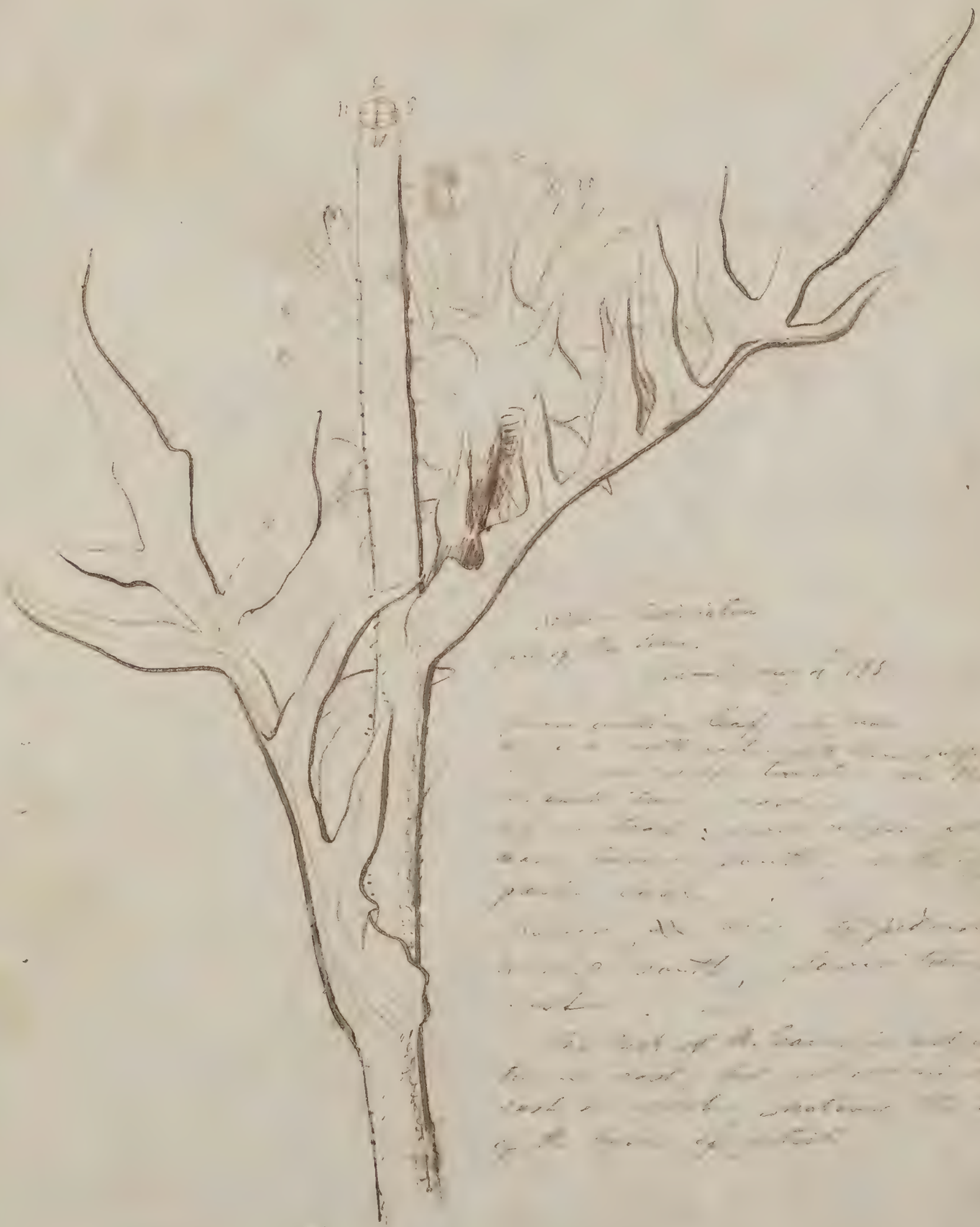
I don't know whether I should subscribe to Harvey & Alger — there are so many coll. which would be more important to us — a library as well as books — that I can ill afford just now. Nevertheless, I think a ~~sel~~ "less full set" would be instructive, and I would lay it by for the time when many never come that I could study this into a very easy, [illegible] down for one of the smaller sets.

On another sheet you will get some notes on trees. I will give you more as you go along and ask for them.

I have sent your Wright's Chart to Mr G. Dittmann from here who wants to learn from A. Curtis' Shoreville Cemetery.

Very faithfully yours

J. Langdon



Albany Aug. 4th 1853

Dear Doctor

I have just received yours of July 25 (our mail communications are far behind the times, travellers go to Boston or New York now in 3 or 4 days) and have sent the enclosed to Fendler. He will write to you how he desires those books sent. The best way, which I suggested is by some opportunity here, and then to him by steamboat. — His restless spirit and want of success in his present occupation will probably drive him in the field again. He would be a capital man in some new pacific Railroad survey — not these hasty ones, in the way — but one that would take several years to complete a careful survey on foot. I have thought of such a place for myself !! Surgeon & naturalist ! —

We must keep Fendler warm, he will do good service yet — but he might offer you more than that one set for the books ! —

I am pleased to see Thurber come into measures. These men see that they can not get along on their own hook. I don't think that Bartlett will publish a separate report, and his collections then will come into one great general report — But you should use Emory's appropriation (which as I hear he will obtain)

to give more plates!

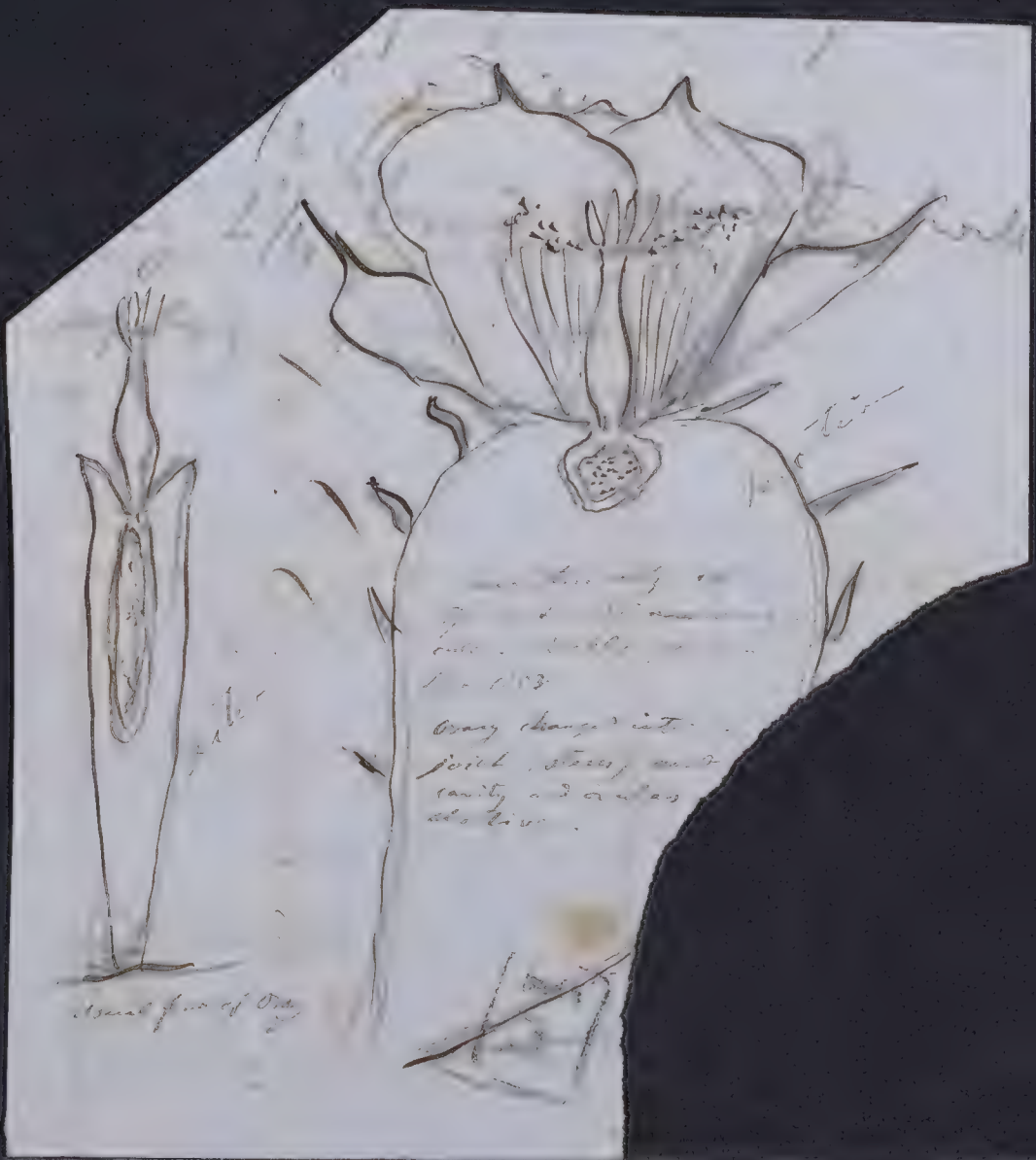
You see from the enclosed that I have ventured to address Thurber. If you approve of my letter, please forward it and recommend the object I have in view. — But he must send soon, as I am going at Cantonment as soon as the summer-sickness (which is much more moderate than it has been since 1849) leaves me more leisure — and having all the material which I can hope to get together for some time, I shall finish at once, and throw that load off! But there are a good many more loads, Asarum, Cephalanthus, Asclep. etc. — If you are going to work out any of these families, let me know. If I can not work it for you, I will at least send you all my material, notes etc. — I have here yet Asclep. from your herbarium. —

Russia's death is a great blow indeed, and in our age it is not so easy to find warm friends among strangers.

My respects to Agassiz. I hope he will keep well, and you too — you both if you must not kill yourselves with over working.

Ever truly yours

G. Engelmann


Ovary changed into
fruit, stamens and
cavity and also
the liver
Usual form of Ovary

TERMS.

d English, per quarter of eleven weeks).....

.....

.....

nt languages.....

.....

, &c. (Materials furnished).....

.....

.....

.....

..... 2

..... 15 0

)..... 50 00

g, lights and tuition in all branches, except in Instrumental Music and Oil Painting)..... 75 00

..... — 50

istitution during vacation and receive instruction in French and English branches for $20 per month.

VANCE.

in the middle of each term. No deduction will be made for absence, except in cases of protracted sickness.

TION

E

re Française

T. LOUIS.

l'Académie

e Société

ne

ESTABLISHMENT
OF
A French Literary Society
FOR THE
YOUNG LADIES OF ST. LOUIS.

MONSIEUR AND MADAME BOILEAU, members of the "Académie de l'Enseignement de Paris" propose the establishment of A FRENCH LITTERARY SOCIETY OF YOUNG LADIES.

The object of this Society is to encourage and cultivate a aste for the French language. One of the best means to attain end will be the creation of a purely French Library, which lone by a monthly subscription of every member.

[illegible] Aug [illegible]

My dear [illegible]

[illegible]

[illegible] as particular [illegible] I have been fully [illegible] as much occupied as any [illegible]

[illegible] expenses [illegible] if it were not [illegible]

[illegible] for recreation or other purposes [illegible] practice [illegible]

[illegible] to [illegible] engagements and give up practice entirely, and you may imagine that this is not so easily accomplished. One may work a great deal more than he has immediate use for, and still never be able to achieve independence. I may continue in this ~~practice~~ mode of life for a number of years yet — still I feel a great longing for travelling, partly to see my old mother and [illegible]

with 12 to 16 [illegible]
ones the stoutest [illegible]
between the ribs are very narrow and [illegible]
of no species of this [illegible]
known; the following [illegible]

Ans'd

Springfield Ill 1858

My dear Doctor

A short time ago I wrote you rather a long letter, including also the Capt Eng Cat [illegible] more, no [illegible] of Cat[illegible] in the Collection? or notes.

I believe I told you that Mr Thurber sent me notes, [illegible] & drawings, & requested his permission to publish every thing in Emory's elaborate report; but no. He [illegible] conscientiously see it in Emory's Report without before publishing it somewhere I have write it out and wish you to publish it at once and in the Sept Number of Illinois (January)

In reexamining Emory's letter it seems to me that he only wants me here to have drawings made of those Cat[illegible]. I thought at first that they were to be lithographed here. But this disappears on be lect, & it would be [illegible] my own eyes; [illegible] a few weeks & I desired you to do it my last, & tell me what you paid, and also what you paid for lithography. — also number of copies printed — of these things you can do, without trouble or loss of time

ever truly yours

E Kapselm

[illegible]

My Dear Prof.

[illegible] the Dept could [illegible] time of [illegible] a full [illegible] day with the proof [illegible] correspondence. It would take [illegible] 3 days.)

It is also impossible that I may come to Washington next May — I [illegible] with [illegible] the meeting of the [illegible] — if I do come — I shall [illegible] other, if not I might [illegible] for you. I want to leave here for 6 weeks if I can manage my affairs so as to suffer not to [illegible].

I am pleased to learn from you that the [illegible] with models. I [illegible] to me in his communication, & this [illegible] to wind a letter which [illegible] & [illegible] & [illegible] & [illegible] if [illegible] work full justice with these men! [illegible] the letter when you write it [illegible]. You were right in rewarding Thurber by naming the new genus after him. I had the same intention in naming the Cocc. Thurbei.

How interesting the new Autosaurus. Udora saundersii was found 25 or 30 years ago

[illegible] in Lake in Northern Germany
(near Stettin I believe) but never [illegible]
[illegible]. Your mother [illegible] appears to
differ from ours, which is much more [illegible], but
[illegible].

Are the Cyclamen exquisite figures [illegible]
only or water colour painting?

I have never seen [illegible] flowering
pot-plants, but Cyclamens have proved
[illegible].

I have for an artist in Germany [illegible]
and here, though [illegible] [illegible] old
[illegible] there are many old and [illegible].

[illegible] you [illegible] plant your Cyclamen
[illegible] in an open place where the plant
[illegible] influenced by [illegible] [illegible]
[illegible] it in [illegible]. [illegible] keep
[illegible] on it.

You will oblige me to order Three Dozen
[illegible] of my papers on Cereus gigantaeus
for Yourself, of which you forward one dozen
to Thurber and dispose of the other 2 dozen
[illegible] third Cent, and have three dozen
more for myself; all of course at my
[illegible], if expense there is; — and let
me know to whom you send copies.

[illegible] certainly should have your castor
[illegible] — Do you have the western
[illegible]? — If not I can send you

plenty of it. It grows hereabouts [illegible] [illegible]
for months as weeds in [illegible]. The [illegible]
species coll. on the Potomac has in the
joints and much shorter, thicker, more abruptly
acute leaves than the eastern plant. The [illegible]
of it I have not seen. The Opuntias
are very difficult.

[illegible] will not, I suppose,
[illegible] to Mrs Gray for some time, as
she is since last night the happy mother
of a very pretty little infanta. The infant
and [illegible] are [illegible] the [illegible]
[illegible] of [illegible] [illegible] [illegible] of [illegible]
[illegible] [illegible] than a [illegible]
before the child was born — [illegible]
[illegible] is all [illegible] [illegible] of [illegible]
[illegible] is [illegible] of [illegible] to the
full effect.

Now [illegible] my dear Dr. I am [illegible]
a happy prosperous New Year to you and
yours — the same to Priscilla & family.

I just discovered a [illegible]
full of fishes here, from Downy [illegible]
and shall send with [illegible] as soon
as the ~~river opens~~ [illegible] within
it opens.

Ever yours

[illegible]

Dr. E. Stokes paid only
$3. for wood Jany. 12. –
to you one me $ 4.44.

Rev. Alva Hovey
Cambridge
Mass.

[illegible]

Since the question first arose of the position of the leaves in the
has been raised — I never found an opportunity to examine
the living plant till a few days ago, when I met
with some stalks, just commencing to flower.
The radical leaves had the position stated, viz. the
edges turned north and south; but what was new
to me and very surprising: the lower cauline
leaves, though their bases were arranged nicely
all around the stem, had their faces twisted
in the same direction as the radical leaves.
What can be the cause of this? Has the

[illegible]

I shall try to find the plant again and take a Compan[illegible] with me. — I shall try to find S. [illegible] and see whether the species so closely allied to S. lacinia[illegible] has the same peculiarity. —

[illegible]

My dear [illegible]

[illegible] I believe I have not written to you [illegible] even without other help [illegible] I [illegible] to spend some time with you, but I [illegible] [illegible] in the hurry [illegible] I will myself [illegible] that it was [illegible] head [illegible] occasion [illegible] to the [illegible] Through this past summer [illegible] occupied than ever before [illegible] [illegible] my [illegible], even my [illegible] [illegible] [illegible] and I commence to bring up [illegible] thing else.

No, indeed, that I have not written [illegible] have is that possible? And I have not [illegible] as you [illegible] Here it is:

So I have not told you that I have found here an excellent artist (but no botanist); It had been my intention at first to give only outlines of the Cacti and on stone, but [illegible] his plan, and we are going to have full copperplate engravings; my artist [illegible] drawings, but I must explain and correct and direct every thing, which takes me a great deal of

[illegible] The finished plates [illegible] better than any German Cactus plates [illegible] more correct. — But the work goes on very slowly. — [illegible] a lot of Mexican Cacti [illegible] and described [illegible] 15 different genera. [illegible] not more than 3 species all [illegible]. If that is the way they have made all their species, the 800 Cacti will come down at least one half. I should make 200 of me fifty species, & find them [illegible] and it is absolutely impossible to [illegible] the circumscription of a species without flower and fruit; just as bad as if one had to describe the oaks. —

Have you Mendel's Genera? [illegible] for the work?

I write very incoherently, and omit [illegible] thing I have to say. — you must not grumble about it.

[illegible] some relaxation [illegible] examination [illegible] steady, and at present of 14 years. I had half [illegible] thought of accompanying Emory to Sonora, [illegible] has gone a week or two ago. He would [illegible] gladly take me as surgeon, [illegible] have had an opportunity to examine the whole [illegible] region and see these plants in their [illegible] in their native [illegible] and in all their variation. But I heard so little of the expedition that I could not make up my mind. My [illegible] requires relaxation, and it is possible that I may accompany it to go next spring.

If so we shall certainly try to find you in Cambridge or wherever you may be. — I am becoming restless [illegible] must soon go somewhere east or west.

Cooper is in Venezuela, in the mountains [illegible] Colony where he has settled [illegible] intends to cultivate Coffee and collect [illegible] etc. if he can dispose of them. [illegible] is dated in April. His direction is: A. Cooper [illegible] Tovar via Caracas, Venezuela. [illegible] years ago [illegible] and [illegible] a few seeds from Sacramento. [illegible] Cupressus from [illegible] Have seeds of them if interest to you?

Tubers sent by Bigelow from [illegible] years [illegible] on the roots of [illegible] flowers with [illegible] tetramerous [illegible] Apios like tubers.

The Irish Potato has [illegible] and [illegible] in Texas [illegible] here. Its large regular balls are [illegible] looking. Have I ever sent you seeds? I have never seen it [illegible] the great [illegible] of 1844 [illegible] after that only very sparingly, till within a couple of years.

I hear nothing at all of Stanley and don't know [illegible] whether he has received my cask of Fishes.

Thanks for the trouble you took with my paper Carex [illegible]. I am glad that the difficulty of the [illegible] Emory etc. is settled. I have all the Carter material now at my disposition; [illegible] relaxation. Last spring or summer I was not

written to me, though I know that he brought much material in the Cactus line back!

I have not received several of the publications of the Academy — but can not examine until I see [illegible] you know hereafter; perhaps I may [illegible] in playing up?

[illegible] vol of Dr Brodie not yet [illegible]: [illegible] I have no time to get any [illegible] material to gather for him. — As soon as it comes out, order a copy for me too.

My specimen of Opuntia vulgaris collected for the Botanical near Washington is without spines. [illegible] say that, [illegible] bristles [illegible]; [illegible] has spines [illegible] bristles, subulate leaves.

[illegible] the [illegible] Bromelia [illegible] the [illegible]! you and Dr Gray.

[illegible] any thing for a long while.

[illegible] package with the vol of the Academy [illegible] the author's letter [illegible] copy [illegible] late; [illegible] you [illegible] other [illegible] Gray [illegible] I [illegible] heard of it. — The expression [illegible]

[illegible] to learn from you that there are some hopes for progress with them! [illegible] in 16 years [illegible] it was begun, [illegible] of the print [illegible] has become necessary!! [illegible] you in connect with the work? [illegible] if it not too [illegible]

Dr Berlandier has any Cactus [illegible] let me [illegible] them! [illegible] name for A Scott [illegible] accompanied Emory on the Lower Rio Grande 1853 [illegible] new and interesting material, which [illegible] overlooked. —

[illegible] Cactus you send to me, [illegible] them presently. — With pamphlet of [illegible] and Couch printed? and where? [illegible] that not come earlier this fall, but perhaps, that is to say, if possible, next spring. —

[illegible] say?

[illegible] not [illegible] [illegible]
[illegible] for [illegible] [illegible]
How shall [illegible] that [illegible] [illegible]
[illegible] ?

If you say [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible]

In that case I make a good offer & am
willing to go to work again in
[illegible] years! In that case, you
[illegible] [illegible] [illegible] E. [illegible] [illegible]
but when must they be done? The time
is the main question.

[illegible] [illegible]
[illegible] [illegible]
[illegible]

There is [illegible]
[illegible] place.
[illegible] [illegible] [illegible]
[illegible]

[illegible]

[illegible]

Glad to hear [illegible]

[illegible]

Europe's Capital [illegible]

Act. Chief. [illegible] Dept.

You mention someone has planted a new year garden. Do you recollect that Gray & alone 1849 from western Mex. [illegible] have sent you — which has become of Gray's [illegible]

[illegible]

on road from Peoria perhaps [illegible]

Jan 21st distinctly the Northern & Illinois north of ces [illegible] prevented all communication. Today we were [illegible] we were worse off than we were without the railroads. Yesterday great cold last Tuesday & Wednesday did not extend he Tuesday we had a perfect spring day 67°! and it [illegible] last below the freezing point since. — I have been to Ogden's since two weeks ago but suppose he [illegible] before this reaches you.

I to hear a good deal from you about the Smithsonian and its troubles, they seem to come pick from the Newfoundland state, Choate etc etc. Henry wrote me some time ago that he would hold out as long as the Regents did sustain him. I hear it mentioned here that probable Rhode Island has much to do with the obs [illegible] A powerful opposition is seen I see, throughout the whole country to influence public opinion against the present disposition of the funds etc; our papers here too have occasional such articles. One I enclose here.

I did not proceed so far in my botanical work as I hoped to do. About and after New Year a good deal of business, regulating accounts, [illegible] Calculations etc crowds in upon me. But I am now pretty much through with this; and can go at Botany

Agassiz, but [illegible] I have to get a new [illegible] I intended to look through all the packs of plants received at different times to select [illegible]

[illegible] several pounds of Corrosive Sublimate dissolved in alcohol to poison especially [illegible] Compositae etc etc. — Do you know these recipes? [illegible] too, [illegible] plants [illegible] much injured by them. —

Among Dr Hayden's plants from Nebraska are a few quite interesting ones e.g. Tilesonia marginata Nutt, Oenogene flavum Torr and one which I take to be Bitellaria alba Nutt [illegible] smaller than the inner ones and sepaloid; the grooves at [illegible]

I [illegible] Antelope horns, Tomahawk, and some Cactus wood & Pine cones — skeleton tubes of [illegible] evidently coll. by Bigelow — who has [illegible] that famous letter from Albany. I find a piece of wood in the box (which came without [illegible]) I take to be the [illegible] What is it botanically? how named. Another piece which I take to be the bark is a singular fibrous substance. I see from your letter that you [illegible] Bigelow's plants — I think I will write to him. Who may have the Cactus? He himself?

[illegible]

[illegible]

several new [illegible]

would probably [illegible]

[illegible]

[illegible]

I feel [illegible] like to [illegible] to see it

for [illegible] to see [illegible]

[illegible] to see [illegible]

[illegible] expense could be paid by the employe

me as a [illegible] of it. [illegible]

~~[illegible]~~ attended to [illegible]

much better [illegible]

Against my [illegible] it is also [illegible]

of time, to [illegible] out [illegible]

hands.

Write me soon if you find time.

also your views about the prospect [illegible]

[illegible] I shall do when I come [illegible]

know yet — but having not sufficient means [illegible]

[illegible] desired for — practice [illegible]

[illegible] to St Louis [illegible]

the [illegible] surgery

[illegible]

[illegible]

[illegible]

which you sent, and the specimen, Melocactus Curvispinus Bert. is Echinocactus Texensis. Thanks for the interesting flora of Tonquinen.

I am glad that the attack on the Southern and on Henry Adams turned out more dangerous — it looks so at first — I seemed so to him, to judge from a letter of his. —

[illegible]

[illegible]

[illegible] March 25 [illegible]

My dear Doctor

Your letters, Febr 23 and March 6th are before me, and I do in order to imitate you in your early answer I write at least a few lines.

Dr Bigelow is with me since two weeks and all leisure hours (and they are few even in this our healthiest season) are devoted to study his and other Cactaceae with him.

[illegible] hope soon from Europe [illegible] Lowery who has [illegible] with him.

I have had after several years of mutual silence a kind letter from Hooker. He also asks after [illegible] — [illegible] that I kept his letter a whole day unread for fear of finding some unpleasant remark on so! I can answer him now [illegible] I cannot [illegible] till I give up practice, which will be done temporarily [illegible] next year [illegible] will stay then in Europe — but I suppose

you want the rest amended ones before that time?

Do I understand you right, that I will have time to work out exhibition next year? Will the vol. of Bordonus not be published till then? —

I do not know at all. I shall come east this spring. I would like to much. — When do the Am. Association meet? — If I do go, I will arrange so as to be present at your meeting in Philadelphia I believe.

A German physician at Peoria Ill. takes great interest in Botany and has recently procured an excellent Instrument from Oberhauser in Paris; he wishes to devote himself next winter to it, and particularly to the present to lichens. Can you get for him the lichens of Tuckerman? If so please let me know so he may mail

Dr. F. Brendel

Peoria

Ill.

Anything to pay please charge to me.

If I do not go at Cambridge at once will you be so good as to state Asclepiadaceae?

Braun's pamphlet is about the spiral twist in the fibre of wood which is usually as regular as the turning of a screw (leans to the right on top to the left speaking objectively and subjectively) I have made many observations for him in former years usually in the woods and I have never noted — lately I did pay no further attention to this phenomenon so well known to wood cutters carpenters etc; how do they name it? You know what I mean; if you split a tree, the surface split is rarely a plane, but has a twist or the lightning strikes a tree and splits the wood or tears off in a spiral line or oblique line.

I commenced an article on Braun's memoirs when Bigelow came, and now I have no leisure at all — but shall resume soon.

I did not get any manuscript of Bertadia from you, but the

Asaph does not write to me [illegible] that [illegible] time in attempting to make girls twirlists! Hope he will [illegible] folly of it soon.

Thank you for your kind invitation to the pic nic next — but that season is out of the question with me, if I go at all it [illegible] is a great part of my [illegible] life [illegible] with practice — Poor Bigelow [illegible] that to his cost — but [illegible] with exemplary patience — He took us [illegible] weeks of every moment of time to get through with the [illegible] instrument!

Your [illegible] affectionately [illegible] the big package of a letter!

Your truly [illegible]

[illegible]

[illegible] says [illegible] are in the South [illegible] each one — do you know any thing about them? Do you [illegible] thing more about [illegible] spl-

X

Pt. Lake April 13 1875

[illegible]

[illegible] young [illegible] me. Dr. Bigelow [illegible] off me and I send you here the results — at least as regards seeds — of our labors. He travelled in the most favorable season for collecting seeds [illegible] time.

I intended to use you to [illegible] seeds for Herbarium, or pick up those that do not germinate for that purpose. They seem to be of importance [illegible] distinguishing the species. Look for ex. at the seed of O. arborescens and O. acanthocarpa — both hardly to be distinguished in their stems & spikes, but the seed indicates with certainty two distinct species — [illegible] flora [illegible] It may be however Nuttall's O. nutt. in Flora. Are there any specimens in existence? The description is so vague that we can not even say with any certainty whether it be had a cylinder or a flat Opuntia before him.

I have come to the conclusion that the cat. Op. [illegible] and ours are distinct plants, and [illegible] O. caespitosa — guessing that the

plant mentioned in a German work as growing in Kentucky and described by Nuttall by that name must be ours. I find that Nuttall described 3 species from Kentucky all probable. O. biennis, O. cespitosa & O. mesoleuca. Are these not perhaps Rafinesquian names? Where are they to be found?

Opuntias are as numerous and as difficult as Asters, and more so because you can never get a full series of forms before you. We do not know yet the extent of the variability in one species; and for the present I think it better to distinguish all forms that seem according to our power to be obliged distinct and to give the affinities, dispose the int. groups which may perhaps not be more than species.

But we have so few of the full specimens, root, stem, flower, & fruit.

I propose to publish soon a short synopsis of the U.S. Cactaceae with descriptions of the new ones. Shall I do it in Silliman's Journal? The full account with plates will come in Emory's report. What do you say to this plan?

Speaking of the number of species I ought to have said, that I was scared, alarmed, when I found, that there in the Territory of the U.S. now 48 Opuntias!! Can it be!! I hope to cut down, even unreasonably, till more than 30 are left.

I have a letter from Wislizenus the other day, very kind, but he mentions Opuntias! I shall write him that I expect to do them in Europe next year. I have sent him the Cactus seeds by a friend who left for Europe yesterday.

I have a letter from Fendler in which he says that he has also written to you. He is delighted with the climate, the flora and especially the ferns, and seems to collect industriously.

The study of the Cactaceae has been too much in the hands of gardeners and amateurs; neither species nor genera are well established. I do not know enough of them to attempt reform.

Among my recent additions is an Opuntia from the Colorado with small spatulate petals — and one from Buena Vista (Gregg — I have sent you a specimen) with linear petals, and as far as I can see a simple pointed stigma! — violating the character of the family.

[illegible]

[illegible]

[illegible] letter [illegible]

[illegible] explanation [illegible]

[illegible] he will [illegible]

[illegible] will keep the [illegible]

[illegible]

[illegible] that in some of the

[illegible] without

[illegible] Finder.

[illegible]

[illegible] right

[illegible]!

It will be the [illegible]

the things I fear.

[illegible] you

often the [illegible] for example

[illegible] you they have

[illegible]

Mr Stimpson [illegible]

Hayden is in a poor state — [illegible] sandy new, I fear — [illegible] few fragments and have laid aside specimens

Erigeria dichotoma can not be a Veratrum — [illegible] to the Melanthacea section [illegible] of the [illegible]

Zygomnemd pedicel

Another form with petaloid pedicel [illegible] apparently bicarpellate — may it be something different?

N. Spica with ripe fruit

[illegible] institution, which seems undoubtedly calyptrum n. sp. — cal. persistent, fruit [illegible]

Flower of Cerastium humifusum which I have never seen, nor find it mentioned —

Two flowerless fragments which seem to belong to Cerastium or [illegible]

Astragalus Drummondii is in H. collection [illegible] A. plattensis with good fruit —

Drabe nivomatha [illegible]

Hayden makes poor specimens [illegible]

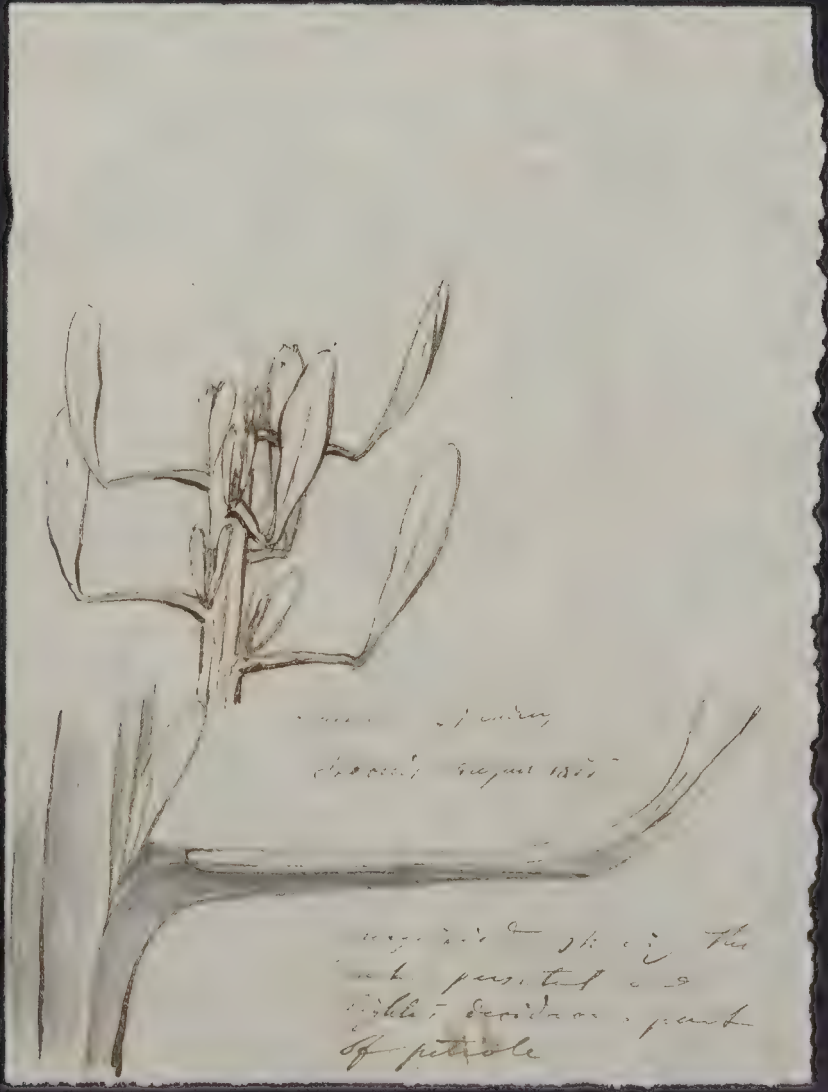
[illegible] few of [illegible] Cat. [illegible] have [illegible] — but

Here seems one of the [illegible] of H. [illegible] — [illegible] with these seeds ought [illegible] to be thrown away.

[illegible]

[illegible]

How does [illegible] not hear from us



[illegible]

[illegible] for the [illegible] how [illegible]

[illegible] was the

[illegible] association? Can [illegible]

not say a [illegible]

it

[illegible]

[illegible] increased [illegible] for nothing else [illegible] had two boxes [illegible] spend [illegible] ? But all the time [illegible] devoted to Cacti especially those of Mexico [illegible] will have to be in the hands of the printer soon. Rattler [illegible] sketches only of details for the Report, which I hope will please Botanists better than awaite [illegible] Cacti are difficult, especially as we know of [illegible] the less important parts (and are without flower [illegible] fruit — and even of these I believe the true diagnostic [illegible] is not yet ascertained. I compare especially the [illegible] Cotter and Holdage [illegible] difficult to settle; and [illegible] be only possible [illegible] ?

Of course I [illegible] in Euphorbia, Mole[illegible] to [illegible] — but hope to shake off that Cacter Incubus in the course of this year, when I shall be more at my ease.

[illegible] Hay [illegible] Account. I almost suppose I have [illegible] of Gymnopteris montanus which I suppose was in that package. I can say no more about the plant [illegible] was in early flower, but I suppose that the Mexican collection must contain fruiting specimens and will decide all doubts.

[illegible] here I brought in your letter. — Bluestockings are an abomination to me and so I approached it notwithstanding your cordial letter with a good deal of

hesitation, and you will not be astonished to learn that we parted as good friends, at least from my side [illegible] of body and mind, and combines her manifold acquaint[illegible] [illegible] had in our country, republican country, many Cecils [illegible] [illegible] me to accompany you [illegible] at home you must not fail to present my warmest regards.

[illegible] Pt. of Cactus seed for next spring; [illegible] the next year! they ought to be [illegible] made in spring; for I find that [illegible] on the tow-sack between the pots [illegible] and grow very well and flow better than in the pots.

[illegible] is the plant of the atlantic slope with short ovate short thick adpressed leaves, pale green colour, mostly spineless etc; Op. Rafinesquii I name [illegible] found [illegible] and which probably grows in Indiana & Kentucky to Louisiana & Texas, and in some apparently well defined forms or subspecies [illegible] it is larger, dark green, mostly spiny with elongated subulate patulous leaves etc. Whether these species connect in Georgia or Tennessee, whether O. vulgaris goes up to the mountains of the Northern states, or what species or forms grow south, I do not know. I dont mention an exact species; I have no idea what it may be.

I have mentioned species of Opuntia before. I dont know whether all the distinct forms are species, but they must be described separately and may be grouped together. If the grouping great mistakes may be made however until we know more of these plants, for I have no doubt that many apparently extremely very similar forms are widely separated while others may be very nearly allied or identical, which in their growth and other external characters are apparently very distinct — But I wont bother you with Cacti, they are bother enough to me.

[illegible] Cacti are — Write me also whether I shall return his figures with my note?

195 Opuntia polyacanthus (Cactus cantoa, pon[illegible])

2423 Cereus Berlandieri nsp. I was much pleased to find this flower [illegible] the plant; the whole plant, fl. & fr. is well known to me; it is cultivated in our gardens under the wrong name C. Zeppii and was been sent to me under that name by Dr. Sales, who declared it to be an undescribed species. Having never been able to ascertain the native country of this plant I hesitated to describe it [illegible] specimen of Dr. Berlandier is quite characteristic; [illegible] the plant was rec'd in our gardens from Cincinnati together with other south Texan species and was no doubt originally from there. It is nearly allied to our C. parvulus, and to C. pectinatus DC.

993 & 1455 I have not received; if you wish me to pronounce about them, you send me your specimens by mail and I will return them immediately with my notes.

Nothing from Fendler — If you get this yet in Europe you can best write to him from there, as the letters go by the english steamers to Sagua.

Agnes sends thanks for your photograph — [illegible] you should have it taken again in Paris; [illegible] are a little dull, light & shade should be more marked. I may get mine taken in Europe next year when I will send you one if of any interest.

I am glad to learn that a new edition of Manual is come out both because it indicates [illegible] and because a new edition will be much enlarged and improved. — Let me know when you will want notes, I suppose it will [illegible] little of your northern forest excitement; and exclude the slave states? But

[illegible] population if did not [illegible]

My [illegible] vine which for two years [illegible] the axilla [illegible] vigorously [illegible] long petioles the [illegible] which is redbrown, and becomes hard and [illegible] the leaf with the upper green surface of the petiole [illegible] fall. These primary [illegible] also have [illegible] axillary fasciculated one [illegible] which is [illegible] but continues to bring [illegible] weather. So [illegible] a whole leaf [illegible] and [illegible] spine, which is really done in the [illegible] left to themselves [illegible] I also include a rough sketch which shows that the green decidious part does not reach the base of the petiole. It is very neatly and nicely made.

This is [illegible] only interesting botanical fact I have to communicate [illegible] season!

I also put [illegible] in alcohol for [illegible] hard [illegible] narrow, [illegible] much larger [illegible] yellow with [illegible] common [illegible] sea. [illegible] conclude [illegible] volume. If yet in Europe [illegible] remarks to be [illegible] here [illegible]

S. rigida (Bourg.) I do not know
but believe — have the seeds from
Niagara, and take it to be a
mere variety — Spiraeta is
a very southern species —
S. corymbosa & vestita
I should know — I judge
Spiraeta tomentosa to be a form of
S. corymbosa, from the description

I may have forgotten some
trip — but I believe nothing
essential

I hoste

Yours &c —

J. Torrey

St Louis Jan 29 1856

My dear Doctor

Your letter seems
to be as long on the way as mine
yours of Jan 12th came here 20th
& that of the 14th on the 22nd.

I am sorry you do not let
me know of your new edition.
You had mentioned it ~~last~~ fall
but not as a thing, quite ready
and near. I am afraid you
leave out some of our plants.
I have written to Lapham to
whom I have just sent a catalogue
to return me a copy (I have
kept none) so that you may
gather from that whatever
you want: —

Astragalus Bichorensis
Rumex aquaticus
Datschia longiflora
Grindelia squarrosa — these
are found on the other side of the
River. —

Sida hispida used to grow
on this side — but has disappeared
I do not know that it ever was
found east of the Mississippi
— by the way can Pursh's plant

be the same thing, from Georgia! Drummii probably grows also in both western Illinois — Other of our juniferous limestone plants, e.g. Cnothera Missouriensis, Lithospermum canescens, Bouteloua scolenta etc I have never traced to Illinois — though they may grow there, the geological formation extends to southwestern Illinois.

Hypericum Drummondii used to be common here —

But I believe most of the plants I have sent you some time or other, also my two new Cyperi one from Illinois, the other from Missouri.

The Cuscutae you get herewith. Dr Engelmann will give me only the trouble of transcribing as I have had the MSS ready for many years.

I have not studied Euphorbia certainly looks different from E. pilosa. I have often collected it from many localities and find it quite constant in the characters mentioned — I may have sent seeds or specimens to Europe.

The Euphorbia I will send soon but before publishing in Silliman it would be better to examine Wright's etc which I will do as soon as Carl will let me, and of course after you have anthered. — I have now Dr Hayden here with many fine plants, (in wretched specimens !!) He takes a good deal of my time, but he is energetic & zealous, and I must do every thing in my power to train and direct him.

I will give you full character of our two Spagania — whether you have other or I do not know. you have my specimens I believe. Fries I have not.

Alismaceae I will do I distinguish in the north Sagittaria rigida, heterophylla, simplex and pusilla the 3 first grow here. But I must say that I do not know the eastern form, having seen hardly any specimens from there. If you should conclude to send me any, see that they are in fruit.

Examining Nuttall's flora I find that we have here his Sagittaria latifolia obtusa & perhaps some others which I take to be forms of variabilis but without extensive & genuine specimens I can hardly see &c.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

St Louis [illegible]

My Dear Dr [illegible]

I get from Mr Lapham my Catalogue and make such extracts as may be of interest to you for new edition of manual. I have no doubt that many of the plants you have already from me or from others, and have also notes about them. After all I was sorry that the Catalogue is so small! Dr Hayden has left today, and I can go about my own affairs. But other business is also troublesome & pressing — the foundation of a new (principally German) hospital — the starting of an association for the prosecution of Natural Sciences (stirred up by Dr Hayden's magnificent Collection of Fossils, quadrupeds) etc. all take time.

I have sent off 28 plates of Cacti for Capt Whipple's Report illustrating mostly the Opuntiae and also O. Rafinesquii & O. vulgaris — In regard to this last I have nothing to rely on but Wislizenus' specimen for the

Potomac.

I have to finish the Report on Cactaceae (Cripple, viz.) & the Euphorbias and then Cripple Loranthaceae as well I do the Euphorbias & other Euphorbiae? — Must go — Engelm's Cactaceae; by that time Spring will come & I shall dissolve the Living Boundary Cactaceae, & be done with that Class for a while. —

I wrote to you about one week ago, sent you Mss for Cassouts and asked about Sagittaria. You may send me a head of ripe or nearly ripe fruit of all those nominal species if you can, & I will compare with my ~~other~~ species.

I told you that ~~S.~~ simplex & S. heterophylla are the only good species we have here besides S. variabilis ...

If you want only Euphorb. for your Manual I can above copy my old notes — if you think best to do the whole batch, I will have to go over the whole field again & examine Engelm's & others not yet studied by me.

Spurgeia — I have also mentioned — You can have full notes about my two species, & then compare yourself with Fries — Do send me a head of your Sp. ramosum to compare with mine — the other, slenderer plant we have here I certainly take to be Sp. americanum — or it may be another distinct species — at least the Style of ours does not correspond with your description in Manual. Send me head of both.

No eastern mail for some days, and I do not know when this will reach you. Hard winter, deep snow and old Mississippi bridge gone over as it had not been

similar to A. Sullivantii, but in this the umbells are lateral, the leaves elliptic, the pollen masses oblongo-obovate-lanceolate.

---

12 March 56

Dear Doctor

I copy my notes on Acentes lanuginosa, which is a true Acentes, and on the other two species — which I think will elucidate all the doubtful plants. — Lapham's is A. Vasseyi ... A. meadii I had never before examined, but did so today. — You must have got my Euphorbiaceae some time since ...

It is your fault that these things have not been published 8 years ago — I had sent you the MSS and you returned it to me ...

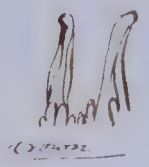
I have now only Spangania and Sagittaria to do for you.

I am still busy with Castle, Gol[dman]'s last Sonora Collection with several new things, only a few days ago — more labor!

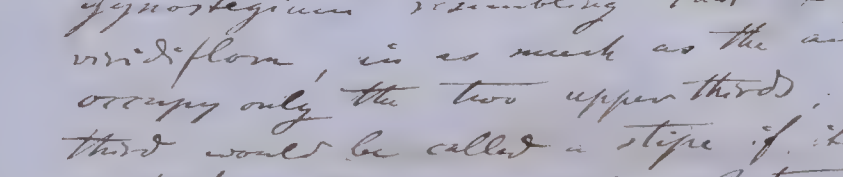
Very truly as ever
your
Engelmann

I have not yet seen Cactus & Mexico — Asclepias must have yet one year here to ripen, I suppose at that time unknown to me, never seen since

Acentes lanuginosa Dne humilis, ascendens, patentim hirsuta, foliis sparsis ~~oblongo~~ lanceolatis brevissime petiolatis aceriusculis, umbellis terminali binis pedunculatis multiflora corollae lobis oblongo-linearibus calycis segmentis linearibus duplo superantibus, pedicellis hirto bis terve brevioribus coronae (virescentes) foliolis convexis adpresso-erectis, apice obtuse recurvatis, gynostegio sessili vix brevioribus.



my specimen sent by Mr Cornwell 1848 from North Prairie, Wisconsin 7-8 inches high, covered with long stiff patulous hairs; leaves 2 inches long, not quite ¼ inch wide; pedicells about ¾ l. long; lobes of corolla ¼ lines long. Structure of corona and gynostegium resembling that of A. viridiflora, in as much as the anthers occupy only the two upper thirds; the lower third would be called a stipe if it was not as thick as the upper part. Between the 5 lobes of the corona we find 10 larger & 10 smaller auriculae, 20 in all as represented above. Shape of Cucullus resembling A. longifolia obtuse & somewhat recurved at apex. — It seems Torrey's plant, whether Nuttall's also? It is certainly not "lanuginosa"



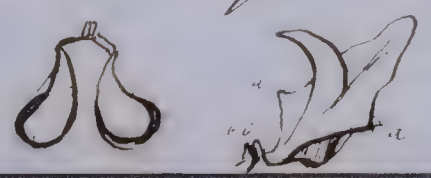
Acentes angustifolius One was collected by Geyer on Prairies near the Mouth of Des Moines river, Iowa, not far from Quincy, but just over the Mississippi. I have to add to Decaisne's description that the root is a black, cylindric tuber, about 3/4 – 1 inch thick, & 4–6 inches long. Note this plant in a note ~~[illegible]~~ collected in Illinois from Illinois

Asclepias Lassei Carey in Litt

Caule erecto, puberulo, foliis lanceolatis sessilibus lanceolatis acutis basi obtusis petiolatis, utrinque puberulis, umbellis terminalibus breviter pedunculatis, pedunculis longe puberulis to mentulis. Calycis puberulentis segmentis linear-lanceolatis, corollae laciniis reflexis pedicello dimidio brevioribus; cucullis patulis, utrinque triangulari dentatis basi dentibus binis acutis, gynostegio ~~glaberrimo~~ subglabro breviter stipitato duplo longioribus, processu falciformi supra gynostegium incurvo folliculis lanceolatis puberulentibus, laevibus.

„Ringwood Illinois, Dr Vasey"

Pedicells 10 lin long, segments of corolla about 3 l. long, green, cucullus 2 l. long, yellowish; pollen masses ovate, oblique, acuminate without a stipe



cucullus laid open, sacate at base, & lateral triangular lobes, & one auriculae

Mr Raphael's plant „Oak opening, Wisconsin", is the same; about a foot high, leaves 1/2 – 2/2 inches long, & 1/2 – 1/2 wide — flowers greenish —

Acentes auriculatus Nob has been collected from Western Texas to the upper Arkansas — it might be taken for the Coville, De Caisne's A. angustifolius, but the cucullus are distinctly 3 lobed, and shorter than the gynostegium, and their auriculi ~~very~~ prominent. —

Asclepias Meadii Torr (fide Mead)

Caule erecto glaberrimo, foliis oppositis sessilibus glaucis, venosis, glaberrimis inferioribus oblongis superioribus cordatis, pedunculo terminali elongato cum bracteis pedicellis calyce que puberulo; laciniis corollae ovatis pedicellum dimidium aequantibus, virescentibus, gynostegio cucullis obtusis erectis gynostegium breviter stipitatum superantibus non auriculatis, processu ~~cornuto~~ supra gynostegium curvato

Augusta, Illinois, Mead.

One foot high, with 4 pair of leaves, upper ones largest 2 – 2 1/2 inches long, 1 – 2 broad; peduncle 3 inches long, lobes of corolla 4 lin long, half as wide. Pollen masses not almost linear, not stiped. The smooth flower is

Mr Lapham [illegible] an abstract Catalogue of Wisconsin plants [illegible] P. [illegible] had [illegible] on this [illegible] Ottinuder — but [illegible] that I got at the Grammar [illegible] had studied before — I [illegible] note [illegible] make and [illegible] believe a new [illegible] [illegible] new Edit of Manual I will [illegible] able to help you now — then [illegible] have a number of plants in Wisconsin which [illegible] [illegible] (but they might be given in Notes)

Aristida amosissima n. sp. diffusa ramosa [illegible] laxiflora, pedicellis [illegible] glumis exteriore 5— interiore longiore profunde bifida 3 nervis, apice aristatis, floribus subsequentibus, paleis laevibus, aristis lateralibus brevissimis erectis, media elongata [illegible] demum deflexa flore longiore.

[illegible] St Clair Co. Ills [illegible] high [illegible] ramose, ligule truncate, [illegible] barbate, leaves flat, [illegible]

[illegible] species [illegible] Digitaria [illegible] [illegible] than [illegible] [illegible] [illegible] [illegible] upper glume half as long as flower [illegible] lower [illegible] small [illegible] [illegible] spikelets [illegible] upper glume equal to flower lower [illegible] almost [illegible] [illegible] not stolon-bearing [illegible] the Mississippi [illegible] [illegible] spikelets [illegible] upper glume equal to flower lower [illegible] almost [illegible] [illegible] quite [illegible]

St Louis March 26
1856

My Dear Doctor

Glad that Fendler is with you. I hope you will give him many useful hints. Should he not remain in U.S. and help us? — I see that Dr Hayden is engaged by Lieut. Warren Topogr. for a geol. trip to Upper Missouri! — could F not do the botany? — But I write in haste about my Asclepiadeae! I am right in very positive I have assumed! A. Vesci is an erect plant with opposite leaves etc.

A. Meadii: a good species with habit of A. obtusifolia but usually smooth and flowers widely different resembling more nearly those of A. Sullivantii.

Enclosed I send two ~~papers~~ figures of Asclepias Cancellata & Longifolia very distinct Plants!

As Nuttall refers (fide DeCandolle) his species to Polystema I have no doubt that mine is the right plant — and A. Longifolia has no auriculae stalk cucullate obtuse or truncate, much better than gynostegium etc.

Let send you copy a description of Mitella Euphylla perfoliata of Arkansas. I suppose I have never seen it.

You are not right in skipping my Rumex. It grows in Illinois (Mississippi bottom) and I have described it & distributed it 10 or 15 years ago. Its acutifolius is precisely same as R. stenophyllus if already printed, put it in the Addenda — but I don't want you to skip it on your or my account.

R. stenophyllus. ~~Virens~~, perennis, erectus, fol. infimis lanceolatis ~~supra~~ hastatis ~~pilosis~~ petiolatis longe acuatis, superioribus sessilibus basi cordatis, stipulis membranaceis lanceolatis; pilosis, dioicis, contracto-paniculatis; laciniis perigonii partibus interioribus rotundato reniformibus crenulatis non callosis; exterioribus lineari-oblongis, reflexis; nucc. valvis multo brevior, acute angulatis

(Also in Arkansas)

Similar to Ledebour's R. acutus, L. nunc. — 2 feet high. Distinct from R. acutus by the crenate valves, which are more deeply cordate, and by the nut being much smaller than the valves.

Is Rumex paucifolius Nutt. this plant ??

I call it R. occidentalis as you skip it occurs in — Near E. Oregon —

Gray

In an old letter from Dr C. Hitchcock I find the following notice, which may be of some interest:

"I have through Mr Hohenacker received some Compositae from Labrador 1, Hier. murorum β. vulgatum Fr. 2, Sonchus oleraceus β. salinum 3, Aster biflorus Mx 4, Arnica acutifolia Vahl. 5, Senecio aureus β. discoideus Hook 6, Centaurea alpina Gaertn. 7, Erigeron uniflorum L 8. Solidago multiradiata Ait. which is a variety of S. Virgaurea. 9, Solidago thyrsoidea E. Meyer.

I write this in haste. I shall attack Sagittaria & Sparganium for you presently.

Ever yours

G. Engelmann

I shall write Mr Kern as soon as I can — $100. Send a set of those sets; or rather keep it & name what price? $10 or?

Alismaceae, G. Engelm. April 1886

Alisma fl. herm. pet. involuta stam definita nuces verticillatae dorso dilatatae 2–3 carinatae

Echinodorus fl. hermaphr. petal. imbricat. stam definit. — indefinit. nuces capitatae costatae.

Sagittaria fl. monoeci (rarius dioeci) petal. imbricat.; stam. indef. nuces capitat. ~~compress~~. dorso alatae.

Alisma Plantago, var. americana. probably a distinct species, but not so formally examined by me

Echinodorus parvulus E. annuus foliis ~~cuspidatis~~ lanceolatis spathulatis, ovatis ~~ellipticis~~ scapis repentibus, radicantibus, ~~proliferis~~ proliferis; scapis umbelliferis, foliis aequantibus, paucifloris; floribus 9–andris; stylis ovario multo brevioribus; pedicellis proliferis reflexis; nucibus vix apiculatis, multicostatis

Velvet St Louis on both sides of River, margin of shallow pond. — 1–3 inches high; leaves 6–12 l. long; fl. about 3 l. diameter. I have not seen the plant from any other place; and Alisma rubens most probably belongs to Sagitt. pusilla, not here

E. rostratus E. (A. r. Nutt) annuus foliis late cordatis obtusis nervosis, ~~scapo erecto~~, paniculam ~~ramosam gerente~~, folia excedentibus; fl. 12 andris, stylis ovario ~~aequantibus~~ superantibus; nucibus rostratis multirostratis

Illinois, bottoms, common. Larger forms 2 feet high, smaller ones a few inches high with lanceolate leaves; leaves 2–3 inches long; fl. 4–5 l. diam.

E. radicans E. (A. r. Nutt) perennis foliis ovatis subtus nervosis late cordatis obtusis nervosis; caule prostrato, repente radicante, ~~p~~prolifero; floribus verticillatis 5–6 21 andris; stylis ovario brevioribus; nucibus breviter rostratis costatis dorso carinato denticulatis.

Swamps in the American bottom, Illinois — Stems several 2–4 feet long, leaves often 6–8 inches long and wide — sometimes cordate, sometimes more truncate. flowers 10–15 l. diameter

monoica Bailey obtusa S. acutis

Sagittaria sagittifolia Europe verticillo infimo femineo; pedicellis femineis multo brevioribus quam masculi (3–4 times); petalis purpureo-unguiculatis; ~~sepalis~~ obliquè suborbiculatis, latissime alatis, breviter apiculatis; filamentis subulatis antherarum aequantibus

S. variabilis monoica s. dioica scapo simpl. s. ramos. verticillo infimo s. pluribus femineis; bracteis acuminatis, pedicellis femineis masculos dimidios aequantibus, petalis albis unguiculatis, filamentis subulatis antheras sub duplo longioribus nunc obovata alata longius ~~cuspidata~~ rostrata, rostro conico ~~tarvato~~.

Very variable 1/4–4 feet high; fruit head 3/4 inch diameter or more; scape always 12 angled; beak 1/3 or 1/2 length of fruit

α. obtusa, dioica, very large, leaves often a foot long

β. latifolia, monoica, leaves sagittate, very broad, acute

γ. diversifolia some leaves ovate – lanceolate others with one or 2 lobes Stlouis

δ sagittifolia usual form

ε angustifolia leaves narrowest, linear with long linear lobes (a variety), fruit largest, with beak more or less horizontal. Ohio

γ ~~brevior~~ gracilis leaves & lobes almost linear, slender plant from Ohio

S. heterophylla Pursh monoica, scapo simplici debili demum procumbente (verticillis infimis femineis floribus subsessilibus bracteis obtusis suborbiculatis) fl. masc. longe pedunculatis filamentis basi conica glandulosa brevissimis, muticis angustis obovatis, longe rostratis.

Stlouis etc. many varieties, for example

α. elliptica, leaves all elliptic, obtuse or cordate at base or sagittate, broad, large (sometimes 6 inches long & 5 wide) Stlouis

β. rigida petioles stiff, leaves rigid narrow Niagara (rigida Pursh)

γ angustifolia, leaves nearly linear Stlouis

δ. fluitans narrow leaves (linear), in water, Stlouis

S. simplex Pursh monoica scapo simplici, gracilimo erecto, verticillis inferioribus femineis, bracteis triangularibus obtusis, superioribus ovatis, pedicellis femineis masculos aequantibus, elongatis gracilibus, filamentis = S. heterophylla muticis parvis, obovatis, angustè alatis ~~obtusis~~ erectis

Stlouis etc – leaves ovate lanceolate or lanceolate linear fl. much smaller than in the 3 other species mentioned –

S. pusilla I have only seen in Dry specimens from Philadelphia very small, one female flower, rather large, ~~fruit~~ fruiting head recurved – see Nuttall (rarely sagittate with broad sinus)

The proportion of the pedicells of male & female flowers is sufficient to distinguish the above 3 species in every instance.

c. natans I do not know

S. falcata is also a good species and extremely variable – does it grow in your dominions? the large forms from N York, (Gigantea Nuttall) and small & narrow leaved ones from Texas & S. Carolina belong here.

182 Pl. Lindh "S. simplex" is a narrow leaved form of S. falcata

183 Pl. L. "S. stolonifera" is a form of S. simplex

The varieties of S. variabilis I might arrange thus:

a. Dioica, spadis plerumque ramosis.

α. Obtusa = S. obtusa Muhl. leaves very large 4–6–12 inches long, obtuse, lobes parallel or more or less divaricate

β. Dioica leaves broad, acute, lobes mostly divaricate Stlouis

b. Monoica

γ. pubescens = S. pubescens Muhl

δ. Diversifolia Stlouis, leaves entire, oval, lanceolate or with one or two lobes

ε sagittifolia Usual form

ζ angustifolia see above, last page Ohio

η hastata = S. hastata Ohio

θ. gracilis = S. gracilis

Sagittaria variabilis, heterophylla, simplex: falcata natans & pusilla I think are the only good species in U.S. S. natans I have never seen.

The New Mexican Sagittaria, collected by Fendler and Wislizenus seems to be a distinct species, but ripe fruit is wanting.

I find among Gregg's Plants a new Sagittaria from western Mexico, very distinct.

I shall go on examining all my Sagittarias, preparing in that way for examination of specimens in other Herbaria — but I find that proportion of pedicells, length & shape of filament, appearance of style and of fruit are the characteristics we must rely on. — Shape of leaves is not so certain, though simplex is hardly ever, and falcata never sagittate but size of leaves is of no importance at all.

The shape and size of style is easily seen by looking at a female flower, which every specimen presents; Sagitt. heterophylla is the most bristly, next S. variabilis, then falcata, then sagittifolia, neomexicana, mexicana, simplex. This last has hardly any style and presents a very blunt head of carpels.

S. pusilla I have not examined carefully, but consider it a good and true Sagittaria. My specimens have no fruit; I have it from the Delaware and from S. Carolina, always with one single deflexed female fl. — deflexed after flowering.

I believe these data will be sufficient for your present purpose, my dear Doctor, and I close here my communications to your Manual. — I hope these data will be in time yet.

Yours truly, J. Engelmann

St. Louis April 7th 56

St Louis April 9th 1856

My dear Doctor

Yours of April 2d reached here yesterday and I at once procured a draft on New York for $105.— which I send you with the request to transmit it at once to Sandler to Philadelphia. He, queer enough, writes me that he is going to Philadelphia but not, how to direct letters! Please to forward him the enclosed letter also.

He writes me that he has left my package of Venezuela plants in your hands where I must trouble you to keep them a little longer; as it would now not be worth while to send them here

When will the great Meeting in Albany be — in August?

I hope to be able to leave St Louis by that time, and

may possibly get to Albany.

Hayden has just arrived here on his way west. —

Before this reaches you, you will have got two letters including Sparganium and Sagittaria matter. I am sorry you have been waiting for these things, and hope they have come in time. I can tell you however that I am kept very much occupied by my patients and have very little leisure day or night now; many obstetrical cases etc. — So I have not been able to continue my Sagittaria investigations which promise to be interesting enough. — The styles and stamens give fine characters while the leaves give hardly any. —

I intend to send you soon a box of Cacteae (Boundary) as I am sending off the Plants I have finished. — I intended to include some Texan Pentstemon & Helianthus Calif but the hard winter has destroyed them! —

How do you like Miss Murray's book, I have just seen it — rather desultory, & rapsodical but many very good points. Not very palatable I suppose to northern people. —

We have a very rich English man here, Shaw, an old retired bachelor who concluded to devote his time & fortune to the founding of a botanic garden & Collection, Kew in miniature I suppose, (He correspond, with Hooker) I hope something valuable and permanent will come of it. —

Ever yours

G. Engelmann

Dont forget to endorse the draft!

fascicled root. —

Soon after the pretty Houstonia minima made her appearance; after a while it covered large patches with its blue flowers; it is long since passed. — Also Drabe carolinianae & brachycarpa Androsace occidentalis and now Plantago pusilla.

Now (May 12) the everlasting Vernonias (Novel & Baldo — which are probably identical) and Verbenas (stricta, urticifolia and their hybrids) make their appearance and Cotula (& Matricaria discoidea) which exclude all other weeds, we have not yet a great many of the European weeds already naturalized farther east; but Cotula has become common and overabundant only since 10 or 15 years

---

I have not yet seen much of Shaw, and am unfortunately not the proper person in a Mess to diplomatize to work upon him — still I hope for the best; he seems very jealous; Get Hooker to encourage him! He has already had a letter from Hooker referring him to me! which had a good effect

St Louis May 13 1856

My dear Doctor

Yours of April 15th reached here in due time, as did also Fendler's letter from Philadelphia and receipt: since then I have not heard from you but you must have got two letters, one about Sagittaria, more complete than a former one, and asking for flowers of S. natans, including also a leaf of a plant which I take to be that species; — the other was about Spergularia which genus is as you justly say not at all clear.

I have been distributing living Cactis since, and send you today two boxes per Express, No 1. for your Garden and No 2 for Hooker which last one I beg you to

forward as soon as possible by an english steamer. I hope every thing will come safe.

I am not quite as busy as last month, and as soon as I have despatched my brother to the mountains shall finish Castr. I have already sent 45 plates to Emory — & 22 to Thipple but doubt whether our Congress will make sufficient appropriation to engrave them. —

I forgot that I probably have not informed you that a gray brother or cousin has come here a few months ago. He is minor & smaller, but goes out with a government party to Fort Bridger — Salt Lake. He goes as geologist, but expects to collect also plants, in which business I now instruct him.

I expect to go east in August travel about there in cities & country in September and then go to Europe take wife and son with me and stay about one year — after which I hope to arrange affairs so

Gray

Centrumelas minimum — Illinois & Missouri
abst. St Louis

Linosella among Hayden's plants — does not be distinguished from the Europ. plant — leaves ovate lanceolate

One Ranunculus pusillus which is just now in bloom (May 7th) is diandrous! and its capsule 4 seeded

I have compared Hayden's & Fremont's western specimens they are identical with our plant! How could De Candolle blunder that way? — Indiscriminately

Galveston specimen is many seeded — & I suppose = De Candolle's R. pusillus

I have passed over our commons (hills covered with short grass, etc, after the mature forest have been cut down by the old french settlers and the bushy aftergrowth of hazel oak & hickory rooted out by the German immigrants) since last winter 3 or 4 times every week in the prosecution of my professional duties — and have seen spring advancing there — The first blossom was in the first days of April (much later than usually) Ranunculus fascicularis which yet covers the hillsides with its large and glossy blossoms. It resembles in many points, or I should say it reminds one of the European R. ficaria — the numerous (often 6–8) petals, early flowering, low growth and

Engelm

What will be your movements in the fall?

Fremont's Report is more forward than Castr. is the first

take it leisurely after 16 years hard work in harness!

I intend to go to New York and as far as Washington before embarking — but should like to know when I shall find all my friends at home. Gray, Agassiz, Torrey, Baird. After I leave here, the Albany Meeting is the only definitely appointed time — all the other movements are free or depend on the convenience of others — I shall embark when & where circumstances will induce me to do — stay just as long as my friends will want me to!!

So I might possibly come to Cambridge sooner than Aug 20 if you prefer it though I do not think two weeks too short for the roundabout trip I propose to take from here then —

1.

St Louis June 27 1886

My dear Doctor

Yours of May 26th is now almost a month old — but I can assure you I have no leisure now — I am pushed just as I ought to be to finish the work so long in my hands!

I hope your flora is finished and should like to have had proof sheets of those parts most interesting to me —

After a long non intercourse I wrote to Mr Curtis about Cacti in his neighborhood, learned that one was growing with him, & on request he sent me by mail a joint with flower buds, which after 10 days imprisonment we libanted and planted, and formed beautiful flowers after a few weeks — certainly distinct from our O. Rafinesqui. His is O. vulgaris. You will have to abolish yours? But

we have here any quantity of forms of this variable plant; at present I can trace it from Wisconsin to the Rio Grande and from Kentucky to Santa Fe though it is possible that several species are hidden under it, which can be distinguished only after a more thorough examination and cultivation. You will see my Report.

I send you the first part of my Mss Cactaceae and ask of you the favor to have it printed by Silliman, Jun. or in Proceeding Acad Phila or in any other publication which will bring it out soon! I want it out before I go to Europe and certainly before the big Reports are out. If you conclude to send to Philadelphia, let me know it once and I will write to Durand to attend to it.

My object at the Albany Meeting is also to meet old friends and make new ones — the proceedings themselves can be read as well afterwards. —

I propose now to leave St Louis first week in August — perhaps about 1st go to Niagara (perhaps by Minnesota & Lake Superior) to Montreal, Lake Champlain, Albany — or if too early for the meeting (20th) I may make short stays at those points — and should be obliged to you if you could give me the names of some persons interested in botany there, or recommend interesting (not only botanically) localities or places to visit — I propose to visit Cambridge after the Albany meeting go from there perhaps to the White Mountains etc and generally speaking

2. You can not imagine what a strange sensation it is for me to write in this strain "disposing of my time like a gentleman".

It would perhaps be best that you should see your mother in August and should be a little at liberty after it — could we not go somewhere together?

I hope your Cont: have come on well I learn that those in Washington are doing well. — How lucky that those boxes came so in the nick of time for the steamer!

I shall keep an eye on Sparganium and Sagittaria wherever I go.

Your old Asclepias Verrucosa will return to you personally and I think also A Bigelow's correspondence. I shall be very happy if I finish Cactaceae. Perhaps I may be able to look at Euphorbia before starting. I will cut off from Boston with 1st July as much as I can — have been instrumental in

increasing. Mr Skinner's family a week ago! Mother & child doing as well as "can be expected"

And now, my dear Doctor if you can make out my hasty writing I shall congratulate you on your acuteness!

I have requested some friends to address letters for me to you after Aug 1st. which please bring to Albany unless further advised.

Ever truly yours

J Kingsbury

Who will read proof for this? Mess of Latin diagnosis — send, if printed — Mr Coleghan if not — can proof sheets be sent here?

Write soon a line

Monday July 21
1856

My Dear Doctor

Your of July 10th informs me of your promptness in giving my MSS. in the printers hands!

Unfortunately I have been working up the most difficult part, the Cuttlefish first, and shall be soon done with him but Cerei which ought to come before them have not been taken in hand yet, that is to say I have not yet

of a room in your house, we are troublesome customers and it would be better for you if we go to a hotel — we can be together over so much.

G E

put the last hand on them,
would it do to print
them ~~before~~ after the Operation
— not well! But if
you say so I will ~~also~~
send 1000 of Operation
as soon as I receive
your answer.

This must be immediately
as I expect to leave
here in two weeks.

Sorry I can not
read proof — Or will
you send it to Niagara
where I expect to be
till August 10th — or to Albany
10 days later.

I expect to bring
Euphorbia, Lorenthus

Adelpia, with me to
you to examine them there
with you.

Ever yours

J. Engelmann

It is agreeable to be in office
"You say that I have the
Command of my own time!
I hope I shall have. But at
present I am hunted in
every way — managing business
affairs, collecting, seeing
a few harassing patients
yet, who will not let me loose
— examining teeth, packing
etc etc.

I will have to thank
you for your kind offer

New York Nov 4th 1856

Dear Gray

Inclosed you will find the check for $100. which I hope will be all right. Many thanks for this as well as all other favors extended to us during our long stay at Cambridge.

We got safely here on Saturday last, but it was 7 o'clock before we were installed in our Hotel (Prescott house, just opposite the St Nicholas) so that I could not see any body that evening. Next morning I had a pleasant chat with Torrey; then we went to see something in the City and some friends. Yesterday half the day with Torrey and half about our business; engaged passage

Asteroides assimilatus in M. Lindh. Wright ct. which I labeled so in your Herb. — The plant is very interesting because as already suggested by Mitchell "the little tooth of the corona-lobes ⟨W⟩ is really a spur equal ⟨ ⟩ to calyx-segments, uniting Asteroides to Solepias! —

Further: James collected on the upper Missouri my Eriosasia Asteroides Cavanigness — Mitchell himself labeled the specimen so no doubt therefore that I was correct and that Asst. Uncinatus must be restored to Carey. I shall see more of it I hope in Philadelphia.

Now good bye. Mrs Gray I hope will have to take exercise! But till here to take good care of herself in this wet weather for relapses are frequent and are more obstinate than the first attack, you ought not keep the house too warm; the skin is kept too active is so much more liable

in the Steamer Fulton for Havre on the 15th next Saturday week — so please send any thing you want me to take along, before next week Friday to Westermann's I shall wait at Southampton any thing from Carey, Hooker etc you may wish to send.

I shall be all day to day in Torrey's — I leave for Philadelphia to morrow.

Letters from you may reach me c/o Wm Baird & Co or Henry in Washington about Monday or Tuesday.

Vegetation is not yet as far advanced, or rather gone, as with you, and Dahlias are seen every where in bright bloom. — Weather bad rainy, warm, very quiet in the streets though Election day people not as excited as apparently as with you.

Torrey has a fine Collection of Cacti from the Boundary with many duplicates, so that you can be supplied with many other things you may not have or have imperfectly — some however or better in your set. —

He has published in Sitgr's plants:

Euphorbia albomarginata Torr & Gr.
= stipularia

E. Wrightii Torr & Gr.
= scoparia

E. Gilletata Torr & Gr.

of the same name

please correct the two former names in your and the two others sit (Hooker & De Candolle's).

Nuttall's own Polygala angustifolia has been collected by Fischer, Fremont and others west of Arkansas is the same as my plant from Torrey and of course De Caisne's Polygala, and not very distinct from my

New York Nov 14th 56

My dear Doctor

Got your long letter yesterday when I came from Washington which I left last evening; thanks for the letter to Dilemnt which will be so much more useful now as I got half of my plates to engrave in Paris.

My Report is in print, and as the fellows will only Monday I may be able to read proof and return it to W. whence the revise will be sent to you.

Accidentally I found the manuscript of Bigelow in the printing office, and found that great part of it is the most amiable Caissen aller talk on our good Doctor; as my name is on the title page I have taken the liberty to scratch out whole pages of extracts of my letters respecting expeditions sent to him long ago, for him,

neglect of this necessary rule. (this is course positive!) Non-Array ~~[illegible]~~ is Cunningham of Nuttally nor Eugh peppedes — but both in the Tour, as I have told you.

[illegible] is really a very peculiar and distinct species — Spurgeni — I [illegible] not so much with it [illegible] as it is a common plant there were hardly any specimens and those the same as ours. but of the Southern [illegible] were here, [illegible] Chapman Curtis etc — all similar much larger than the northern [illegible] in fruit

I must close here, but write perhaps again.

Could I get a letter from you yet? I said [illegible] 12

Kindest regards to Mrs Gray.

Yours

A. Engelm

privately but not to publish — but nevertheless I had not the time to read the whole through or ~~correct~~ alter it to my liking.

It will be sent to you, and I pity you — but can not help it — you will have to do the revising part — and I give you the liberty to alter and cut down. —

I have a great mind to strike my name from the titlepage; if you could devise a title without my name because, a little more obscure & would like it better; as Dr Gray & Dr Torrey, the chancers of N. new species in N.A. would pass as better, which is true. But would ~~interpose~~ rob him of the pleasure to see his name quoted in N. species —

With Torrey I was two days & shall be to morrow a few hours. He has been very kind — and

What do you think I discovered by the aid of his patent boiling apparatus (for using a similar one he says he has a great mind to persecute me as infringing upon his patent) Now read! Sagittaria pusilla is the small form of S. latifolia, and in Florida is a large form of latifolia! —

Sagitt. from Pine Key — also in your Herbarium, but there wrongly named ~~Cay West~~ is the smallest form of S. latifolia!

Alisma subulatum is good and wrongly identified with Alisma Geyeri!!!

Our good friend Farnow is exceedingly kind and obliging — but both his and the Academy specimens are by no means in a prosper state, and I have taken upon me to inform upon him most seriously the necessity of keeping specimens from different collectors in a separate; I fear there is not a little confusion from the

elsewhere, and to yourself — we have escaped cruisers so far — and the shaft has been used only for a few days — but hope to meet that old friend soon.

Yours ever

J. Eaglesfield

Love to Fanny and her inevitable young — and all those interesting remembrances.

On Board the US Steamer Fulton
off the Scilly islands
Nov 29 1856

My dear Gray

Here we are on the coast of England and expect to reach Cowes tomorrow; my Euphorbiaceae are ready for you, but I am sorry to say written in so illegible a hand that you will not be able to give it to the printer in that hope.

Any corrections or alterations which the new part of the voyage of the Herald or my visit to Paris may suggest, I will send you from there.

Monday week we left N York at noon with fair wind and weather; the wind afterwards became high and sometimes quite boisterous but since Sunday we have had fine warm weather with light winds making good progress. Mrs E suffered a good deal the first week, I a very little and Georgie none at all — he

copies in permission of the [illegible]
[illegible] and [illegible] to [illegible]
[illegible] we want I suppose, a few
[illegible] more. Our Company is
as a rule as expected, comprising
[illegible] people at £600 - 70 - and good
many of our fellow travellers prepare
to go to Italy, Egypt, Palestine etc
and many have been before already
over Europe. Our Ship behaves
very well, and almost all day
is spent on Deck in this delightful
weather - tell that to Wyoming
who predicts such a pleasant
voyage for us.

You see that I have been writing
letters which I beg you to send
to their destination.

To Hooker and to Carey I
have also written and shall send
your sheets of Paper to the latter
on Southampton.

The books I will deliver in
Paris if possible myself; I shall
make a stay there of a week
or so in order to arrange
for the engraving of about half of my
plates; the other half will be done in
Washington.

I believe I told you that I have
finished reading proof the last night
in New York, and the printer promised to
send the revise to you. an index
I have prepared here on board.
- the "Herald" will make some
alterations necessary which I will send
from Paris both for Emory, Cripple
and for the Norton Journal; for
the latter I have already sent you
an addition, Cereus Roetteri, but
you do not know a letter I have
told you that C. dasyacanthus
B. minor must be stricken out
as this minor is the redflowered
C. Roetteri; make the same correction
in your Herbarium. You have that
plant in fruit as I myself;
but Torrey has flowers and in
Washington is a living specimen.
And now farewell; my wife
and boy send their best regards
to Mrs Gray as I of course

[illegible] distinct from the European form. Corn flowers & p.t are the same. I believe I have sent you specimens.

Cuscuta — all our native plants belong to a peculiar variety — therefore not introduced from Europe. Yellow & Sandy.

I can not say whether Dumetorum & Vandens are identical — I have sent you different forms, macro-specimen & micro-specimen.

V. rumoridae — [illegible] smooth shining fruit

I have sent you notes and specimens about a Rumex which I named R. angustifolius I believe. —

[illegible] Cephalotes you have or will get any full note.

Atriplex gaudinii add. our: Monsonia — have in [illegible] specimens: with one seed twice as large as the seed of the common gaudinii

A. carolinian — have found in our street — no doubt introduced — has disappeared again. —

Cirsium altissimum Nutt. "

" glandulosum Illinois

Carya olivaeformis

Quercus tinctoria — ours is either an intermediate form of Q. tinct. & coccinea or a distinct new species — the Pennsylvania specimen before me seems distinct

Sparganium 2 species

Alismaceae

Disgrachion Hermudiana and an earlier flowering white species, on drier knolls, barren.

Trillium recurvatum

Allium striatum

Hetheranthera [illegible]

Cunnularia agraria

Dear I just sent a letter off for you, but forgot to mention your Cactacae. I am sorry you have printed that already. Opuntia Rafinesquii is certainly a good species; but I must confess that I have for O. vulgaris only that single specimen brought by Wilkinson from the Potomac. That is spineless or has rarely a single stout brownish yellow spine not " a few small spines, tiny do you say: O. Raf. " probably in Virginia — it certainly grows in Kentucky, but I do not know any thing of a more eastern locality — Raf. himself confounded both species and certainly took Op. Tuna, cultivated in Italy for O. vulgaris & perhaps Oxybaph. nyctaginea grows in Illinois, opposite here: —

* Or was Millers name: O. vulgaris posterior to Rafinesque's ?? Respecting

Additions to Flora from the neighborhood of Illinois

Clematis Pitcheri (C. Virginiana shows near here)

Ranunculus micranthus

Trautvetteria palmata Beardstown, Jeger

Coronilla varia Southern Illinois

Nasturtium sessiliflorum,
obtusum
[illegible]

Draba brachycarpa

Viola delphinifolia

Hypericum Drummondii (so far only found west of the Mississippi (= Missouri))

Hydrochin capillaceum, a good species

Sida hispida (so far only west of the Mississippi and destroyed on its original locality within the present city of St Louis

Linum Boothii

Rhamnus lanceolata

Ampelopsis sp. date

Chaerophyllum leptospermum

Wistaria frutescens — Mouth of Ohio
Astragalus trichocalyx
Robinia Boudoarin — on the Lower Ohio
Desmanthus brachylobus
Prunus chicasa
Potentilla paradoxa
Crataegus mollis
Amelanchier ovalis
Opuntia Rafinesquii
Sedum pulchellum — S. Missouri, but not yet seen by me in Illinois
Houstonia Richardsonii
Cryptotaenia canadensis — not so
Spermacoce glabra
Hedyotis nigricans
Liatris pycnostachya
Aster turbinellus
anomalus (miserable name!)
oblongifolius
Erigeron divaricatus
Solidago Drummondii
Radula
petiolaris var. missouriensis
Chrysopsis villosa
Iva ciliata
Ambrosia coronopifolia
Echinacea angustifolia
Rudbeckia subtomentosa
Helianthus alyssifolius
Leptopoda brachypoda
Nabalus Boscii
Senecio lobatus
Lobelia leptostachya
Ilex prinoides
Plantago virginica
Androsace occidentalis
Dumelia (not yet found in Illinois)

Vernonia Arkansana opposite, but not yet in Illinois

Gnaphalium squarrosum is seen occasionally on the River bank but not permanently naturalized or introduced from above

Bignonia capreolata — in the Illinois
Hesperis rotundifolia Pursh
Gratiola missouriensis
Verbena bracteosa
numerous hybrids
(V. stricta: prairies, barrens, roadsides — wastes (not riverbanks))
Verbena Aubletia
[illegible]
Pentstemon laevigatus
Ichnospermum lappula is a common eastern plant on the upper Missouri, and cert. G. was introduced here; it is not rare about Illinois
Helianthemum canadense
Ellisia Nyctelea
(Phlox bifida Beck — Dr Mead.)

H. carnosum opposite but not yet found in Illinois

Physalis; we have certainly one, perhaps two perennial and certainly 2 annual Physalis here:
perennes 1. Ph. viscosa — potentissime diffusa
2. Ph. pennsylvanica — erecta
annuae 3. Ph. philadelphica (perhaps equal to Alkekengi — glabra erecta etc.)
4. Ph. hispida Dun. diffusa (= obscura Mx.!) pubescens etc.

Amsonia tabernaemontana
Asclepias Viridis — north Illinois
Aristolochia tomentosa — south Illinois
Plotanus florida — D. Mead
Oxybaphus nyctaginea
Polygonum — I have sent you notes before as well as specimens. — P. hydropiper is common. P. persicaria not quite so common and easily and completely distinct. —
P. capitatum — ours is a very tall variety

Frankfort March 2d 57

Dear Doctor

I fear that the plants, my brother collected on the upper Platte etc. near towards Bridger's Pass have been sent to Prof. Bailey at West Point as the Botanist of the Expedition, and Sargent. and that B. refuses to receive them. I fear we never hear the like. I fear no go begging. I see by other accounts Mr. Lincoln to send them to you; if he has done so he could not [illegible] more of it. Please take the necessary steps to secure their collection, and in looking it over see that I get a good share of them. [illegible] Specialties, other

I am going to Germany on my way to Göttingen.

If you will send me a few letters — direct care Messrs Smith, Elder & Co to Athenæum, Pall Mall — they will be reached safely.

Yours ever truly,

J. Hooker

Prof Asa Gray

Cambridge

Mass.

Berlin March 23d 1857

My dear Doctor

I had thought myself entirely forgotten by my american friends for not only you but every body else kept an obstinate silence — when your agreeable letter of Febr 19th arrived about a week ago. — So you have received my letters from New York and from Shipboard — but it seems not the last one dated Paris Dec 12. On that date I wrote to you, [illegible] and Emory. The latter has got his and answered it — how it is that the others have not arrived, I do not know. — I wrote to you about our friends in Paris and about my hasty examination of the Herbarium; among [illegible] Michaux Euphorb. angustifolia, which certainly resembles very much the [illegible] little plant than his Sagitt. [illegible] from Canada which is certainly nothing but the [illegible] simplex [illegible]. What is to be done with the synonymy? Michaux name is bad for many reasons and may stand for a variety, something like E. acutifolia, — it is possible that some of the old Humboldtian Euphorbias are the same as ours; E. [illegible] for example is perhaps serpyllifolia etc. — [illegible] I have those now in hand and shall soon be able to say more about them. — [illegible] wrote you about [illegible]. In Paris I was told that he had left for America in a state of great poverty, expecting to make a living as druggist

already he suffers much from sleeplessness, thirst etc. —

By the way, [illegible] ever got their "Cactaceae" — [illegible] got a small package from America for which the postoffice charged [illegible] and which thereupon he refused. It probably did contain the Cact. — I have seen a good deal and Cactaceae, have been enabled to correct some errors, and shall soon send you an appendix. I believe I have already sent you [illegible] of Cer. Roetteri and Opuntia Pes Corvi.

Give our love to the Agassiz family and all those who remember us. I shall write to A. as soon as I have seen Humboldt. By the way I learned with pleasure that [illegible] family will be here soon. — I have seen several Americans here, [illegible] Mr [illegible] from Salem, a cousin of Mr. Russell, who sends [illegible] seeds to Caspary. —

Your 2d Manual is much [illegible] — people [illegible] ask about [illegible] Flora!!! The first word often, whenever your name is mentioned! — Does Putnam not send a number of copies to Hamburg or Leipsig? —

I was greatly pleased to learn from the [illegible] letter [illegible] that you have that young german now at Cambridge — It will cost you and [illegible] some time to instruct him, [illegible] but I do not doubt you will be amply repaid. My Cacti are done beautifully and cheap, 150 fr. a plate in Paris. [illegible] I have [illegible] to [illegible] —

[illegible] desires seeds or plants of [illegible], [illegible] erectum, Osmunda interrupta, Woodsia [illegible], Aspidium [illegible], [illegible], Asplen. montan. & angustifol. Trichomanes, Schizaea. — The Leipzig garden is beautiful — ferns and will be glad to exchange, through [illegible] and [illegible]

[illegible] the Smithsonian. — Mrs Engelm[ann] [illegible] regards to [illegible] I shall soon write again — Yours [illegible] G. Engelmann

[illegible] way, that he mistrusts or hates every body — botanist in Paris and would so in America; he was spoken of with that sort of haughty pity which is so galling to a sensitive mind; he was said to be half demented in his suspicious character. In Germany I have had a different version. He was said to have been pushed aside because not chiming in with those at the head of his department. In [illegible] he seems to be a sensitive and perhaps morbid mind, but should be encouraged, for we want in America help in every branch of Science. — Do you hear any thing about him? or Torrey?

I have spent half of Sept., Jan & Feb with my old mother and my Brothers and Sisters; unable to do any thing in Botany. Since March I have been to Göttingen and Leipzig, much pleased with my reception there by Grisebach and Mettenius, and by the medical faculty. Seppig has given up Botany and works hard in Zoology. And now I am here where my wife & chil. came to meet me. I spent a few days in Braun's house till I could find private lodgings; he & his wife send their compliments to you and Mrs Gray; both of you are well and kindly remembered in Braun's family. Your old friend has grown very old and is overwhelmed with business other than scientific. He is Dean of the Philos. faculty, rector of the Univ. [illegible] & lectures a good deal. He looks worn out. They have preserved their South German, Swabian simplicity and kind hearted ness with their provincial dialect in this great Saxon; he is universally respected and likei here but does not go much in society, more than is absolutely necessary; Humboldt, whom I have not seen yet (he having been quite sick but has now recovered) does not seem to favor him so much because his favorite Schacht & Braun do not harmonize well. Dr Caspari, now in Bonn, the intended of Marie B's [illegible] is here at present; the younger one, Cecilie, is a young lady of great artistic talent and acquirements; they are all very amiable, and the sons very kind to Georgie. —

I find here several well known botanists: Kützing of Nordhausen, Rosch of the Cryptogamic Herbarium of the library and Reichenbach of the Herbarium; poor R. was [illegible] to you; he is an acute botanist, but perhaps too much of the closet. — Kind of by the way I like Grisebach's maxim, that a botanist should from time to time refresh and rejuvenate his mind and his eyes, dulled by looking on dry, [illegible] mouldy or worm eaten nature in specimens by indulging in the delights of God's living nature, by hunting up and examining the plants as he meets them. — I say poor R. because he is a [illegible] suffering poor dictator; he holds a certain control over his disease but it will finally kill him, as

[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857
[illegible] Gray to Asa Gray, 1 Jan 1857

Via Aachen & Liverpool

BERLIN.
STADTPOST-EXP. VI.
24 3 8-9 Vm

Prof Asa Gray

Cambridge
Massachusetts

United States of America

St. Louis March 30th 1857

Prof. Asa Gray - Cambridge

Sir: I just receive from my brother, Dr. G. Engelmann the inclosed letter, which I send to you with the following remarks. As geologist of a surveying expedition to Bridgers Pass in the Rocky Mountains I made a collection of plants for government, of about 240 different species. Most of them are probably known and described, but some I suppose are new, especially those from some small valleys in the mountains. They are generally well preserved. The commander of the expedition, Lieut J. T. Bryan, Top Eng. send this collection to Prof Bailey at Westpoint to dispose of them at his pleasure. Bailey probably by some misunderstanding, refused to accept them, and left them at the disposition of Lieut Bryan, who upon my advice wrote Prof Bailey to send them on to you. Shortly after that Prof Bailey died, and we do not know what has become of the collection. If it is not in your hands it must be at Westpoint; it is certainly worth the trouble of getting it away from there and looking over it. Lieut Bryan is willing to make you a present of it and only asks you for a catalogue of

plants for publication in the report of the expedition.

If this is agreable to you please let me know it or Mr. Bryan; and if you can not get the box from Westpoint he will do his best to help you.

Very respectfully

H. Engelmann

Write: H. Engelmann, care of Ad. Wislizenus M.D. St Louis Mo
or. Lieut F. T. Bryan Top. Eng U.S.A. St Louis Mo.

Leptochloa fascicularis also on sandy banks of Mississippi.

Eragrostis n. sp. which I sent to you

Amphiarin macrosperma lower Ohio & Wabash

Paspalum fluitans

Panicum sanguinale, glabro & filiform I believe I have remarked before on the distinct characteristics.

P. dichotomum — The large flowered form (P. pubescens Ph.) and the small flowered ones (P. autidum etc) seem to be distinct, but not the smooth and pubescent ones.

Cenchrus tribuloides (common on the sandy banks of the Mississippi

Tripsacum dactyloides common in fertile prairies.

Andropogon virginicus Southern Illinois

The plants of our lead region in the south eastern part of the St. (Bemelis, Acnotherm missouriensis Borales exaltata, Lauro worthia Lithospermum tenellum and others may be looked for in South western Illinois

Continuation of Illinois Plants

Cyperus tenuior n. sp. annuus, culmo acute triangulari laevi, foliis culmo subbrevioribus planis, margine dorsoque scabris; foliis involucri 3 exterioribus longissimis, interioribus brevioribus; umbella composita, radiis divaricato-ramosis; spiculis spicato-capitatis, filiformibus subteretibus 7-9 floris; rachi squamis interioribus linearibus adnatis alata fragili, squamis exterioribus remotis adpressis obtusis, dorso luteis & nervis membranaceis decoloratis; staminibus 3 stylo ad medium 3 fido; achenio lineari trigonio apiculato basi paulo attenuato breviter stipitato squamas interiores aequante exterioribus paulo breviore.

Banks of a muddy creek in the Mississippi bottom opposite Alton is together with C. Michauxianus, C. erythrorhizos and Dichromena ciliata, sometimes together with the latter floating among driftwood. H. Leptocaulis — From 4 inches to 2 feet high; leaves in the larger specimens 4 l. wide; pikelets mostly brown, 6 l. long, thinner than in any other N. American species, and flowers more distant so that the apex of the lower scale never touches the base of the upper one. Nuts not 1/8 of an line long. — The usual growth, the fragile spike, the distant flowers & which embrace the nut show an alliance with C. Michauxianus, from which however it is readily distinguished

C. Michauxianus has [illegible] longer spikelets 8–20 flowered with shorter and much thicker nuts.

C. reclinatus n. sp. rhizomate tuberoso repente, culmo acute-triangulari, laevi, foliis culmum subaequantibus planis, margine scabris; foliis [illegible] 4–6 umbellam superantibus, radiis simplicibus elongatis, spiculis laxe spicatis (inferioribus reclinatis) linearibus subtetragonis 5–8-floris, rachi squamis interioribus linearibus adnatis alata, squamis exterioribus adpressis obtusis dorso herbaceis 7–9 nervis, margine apiceque membranaceis; staminibus 3, stylo ultra medium 3-fido; achenio oblanceolato-lineari triangulato apiculato, basi sine stipite attenuato, squama interiorem aequante exteriore tertia brevior.

Sandy banks of the Merimac River south of St Louis, with [illegible] and Heliotropium curassavicum (not yet seen in Illinois); fl. Aug & Sept. near C. tetragonus &c, easily distinguished by the tuberous rhizome, larger spikes more distant flowers, larger nuts. It forms with C. tetragonus C. Baldwini and C. ovularis a peculiar section in which C. reclinatus has the loosest heads & longest spikes and C. ovularis the most compact heads and shortest spikes.

Culm 10–20 inches high; leaves 1½–3 lines wide, spikelets green and shining 6–9 l. long, 15–30 in a head; flowers rather distant, so that the tip of one scale scarcely reaches to the base of the one next above it. Nuts 1⅓ l. long (in C. tetragonus 1 l.)

(I copy this from an old description which I may have sent you before. I have not reexamined the plants — but you have received no doubt specimens from me)

Cleistanis compressa opposite St Louis
Cleistanis latiglumis, thickets on the Illinois river near Peru

Sporobolus junceus
Aristida gracilis
ramosissima var. diffusa
~~ramosissima, panicle [illegible], probably asperis glumis~~, spica simplici laxiflora
[illegible] laevibus glumis exteriore 5 interiore longiore profunde bifida 3 nervis, spica aristata, florem subaequantibus, paleis laevibus, aristis lateralibus brevioribus, media elongata, ex ista denique deflexa, flore longiore
Dry Prairies, Illinois, 8–18 inches high
Ligula truncate barbate; leaves flat, flowers 6–7 l. long. — A dichotoma is nearly glabrous, is a much stricter plant, at least panicle, smaller flowers shorter than the rough one-nerved paleae; [illegible] rough [illegible] are twisted, hardly as long as flower.

Bouteloua papillosa

St. Louis April 15th 1857

Prof. Asa Gray - Cambridge.

Dear Sir:

Your favor of April 4th came to hand yesterday and I was much pleased with its contents. I have to tell you that Lieut Bryan would like to have the report about the 1st of October next. As my brother will not be back so soon, perhaps not before next year, you would much oblige us by preparing it yourself.

Letters will always reach Lieut Bryan in this city provided he is out on a business tour.

Very respectfully yours

Henry Engelmann

agreeable — [illegible] Is it that it was [illegible] so agreeable at all ?? — I hope not after his former friendly letters. I shall write again from Paris. — Do you hear of poor Carey, who just when I left us was to lose his second wife. — Fitzl is very kind and obliging to me in the Special Library, the use of which is thereby much facilitated. He thinks of a second edition of the Thesaurus, and tells me of a good plan of the booksellers, which prevailed in another instance proved beneficial both to buyer and seller; the second edition would be sold at 1/2 or 1/3 the price on delivery of a copy of the 1st edition, in the interval, and. How would such a plan do with the Manual or textbook? It leaves a good margin to the bookseller and induces the public to change their [illegible] comparatively low price for a new one!

What has become of all the Boundary and Exploring expeditions and Railroad exped reports? are they progressing? I hope Torrey to send me at least the Cactus plates but have not heard from him. My plates are progressing slowly but are very nice.

Asa Gray & Fendler wrote you about 2 months ago. Nothing new to add. I long to receive letters from you. Write to Kew, where I expect to be about July 1st or between 1st & 15th.

We have suddenly hot weather now, [illegible] warm work; our love to all our friends!

Yours [illegible]

Berlin May 27 1857

My dear Dorton

There I am yet in Berlin, and very loth to leave in a week hence — level, plain, dusty, sandy, hot Berlin! I have had [illegible] life that I did in Cambridge, working hard from day to day for better than two months! I found it very necessary to get over Cucurbitae and I think I have succeeded — My consolation is that I never could have accomplished any thing in working [illegible] any other intricate genus of plants in St Louis, constantly interrupted by the claims of my patients; since 6 weeks I have scarcely seen any [illegible] but Cucurbitae and I live in them [illegible] I can tell you, they are difficult enough, and require such close attention. Wrights have also been worked through now [illegible] included you get a list of them; there are some fine things among them. I should have some alterations to make; Cucurbita ambrosina of Bayrich I find to be in the herbaria sometimes Gronovii and sometimes Cowpli; more the former, for which the name is inappropriate. I [illegible] it therefore and [illegible] all Cowpli now inflexa; glomerata is [illegible] Rafinesque paradoxa, [illegible]

[illegible] of his species. The [illegible]
[illegible] make a [illegible] of the
case [illegible] you from Africa, and from the
island of the Cape [illegible] will fall [illegible] the
genus [illegible] idea of [illegible].

In Entomology I have not done much
and was [illegible] special
[illegible] I [illegible] Cicadas, [illegible]
[illegible] both C. tibicen and
C. [illegible] H.B.K. [illegible]
the true prostata is [illegible] yet; I [illegible]
see some that is [illegible] C. [illegible]
from Nebraska [illegible] as there are two of that name already!
one from Siberia, another from the
Himalaya; I [illegible] C. notata for it. No other changes of
any importance, except the identity of
C. serpens H.B.K. with C. hermianoides.

The Drawings are the same amiable
copies you know, [illegible]
also [illegible] grown up [illegible]
one of them quite a parent, two
almost grown sons, & 4 younger
girls, great friends of Georgie who
plays with them while with the boys
[illegible].

Bailey then is no more. Ehrenberg
thought a [illegible] of [illegible].
[illegible] plants my
brothers [illegible]? are they safe
now? — But yes, he wrote me the other
day that he had received a note about
them from you.

I have since reexamined Aiton [illegible]
[illegible] no still Conclusion than that
[illegible] we take
for it, the Louisiana & Texas plant, —
Kunth's E. ten[illegible] [illegible] altitrichoides [illegible]
both synonyms! [illegible] a unmanioides
is a [illegible] Plant from [illegible] smooth, HWK
with petiolar appendages & colobose seeds.

The story of the Cicada in the old
world is a great deal more trouble than
I thought it would, [illegible] because
of the difficulty of identifying the
Italian species! There are now
3 or 4 American ones which I can
not identify species above the
Mediterranean. But I will not
bother you with them [illegible].

I see in Silliman [illegible] a
cheaper edition of your Manual
not an altered or improved edition?
Whenever changes are made, I
will have to give you full notes, and
Engl. says it spoils a book. and
have to recommend alterations. — I want
to see Asa Gray before a definite
change, and have his opinion.

Strange that I have twice written
to him and have not had an answer.
[illegible] I asked him [illegible] time
my visit to England [illegible] to make

Please [illegible] [illegible] enclosed [illegible].

[illegible] July 7th 1857

[illegible] Gray

I believe I wrote to you [illegible] some time in May, [illegible] memorandum of such a letter. [illegible] letter [illegible] March 24th [illegible] unanswered. [illegible] I have communicated to you the main result of my investigation of [illegible] [illegible] to add [illegible] with the exception of [illegible] californica and [illegible] Douglas specimens [illegible] Engl [illegible] I can not exactly say which is which. [illegible] collected [illegible] taken [illegible] [illegible] [illegible].

[illegible] in Paris very little materials [illegible] [illegible] (Cuscuta capitata [illegible] [illegible] may [illegible] ([illegible] [illegible] North America [illegible] from South America. [illegible] on account of [illegible] [illegible] specimens.

They have here however an abundance of specimens from Southern Europe [illegible] Northern Africa in the [illegible] also in some private collections, and as I [illegible] with these [illegible] I must wade through. [illegible] has made investigations about

[illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

How are your works proceeding [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] you [illegible].

[illegible] [illegible] [illegible] [illegible] 14 [illegible] [illegible] 36 [illegible] 12 [illegible] [illegible] [illegible] you [illegible] [illegible] them.

Letters or packages [illegible] on the Maine will always [illegible] [illegible] [illegible] [illegible] [illegible] will [illegible] me there yet. Perhaps Miss [illegible] has something for me from you.

Nothing to change in Euphorbiaceae except E. [illegible], which is a name used already twice, change it to E. [illegible] De Candolle has [illegible] lately and [illegible] think of attacking Euphorbiaceae as yet.

What about that English Expedition to the North west?

Our love to Mrs Gray — yours [illegible]

G. Engelmann

Flora Brasiliensis (130 plates) [illegible], by Gray ?

[illegible] progress [illegible] are
[illegible] that [illegible] you
[illegible]
[illegible] going
[illegible] in Europe. [illegible]
[illegible] Mr. [illegible]
[illegible] Assistant [illegible] here, on
[illegible] home. [illegible] before I
[illegible] it. — Bentham is here, but I
have not seen him yet.

You want to know what we are doing, and how we spend our time. We left Berlin in the first days of June, went in a week (stopping at several places with friends and relations) to Cologne, and are here since the 15th. We am not working quite as hard here as I did in Cambridge

[illegible] to visit the Dulcé
[illegible] while I do I neglect Hospitality
[illegible] medical men entirely. — I hope [illegible]
to London in 2 or 3 weeks; will you [illegible]
be able to see your answer to Hoskins?
I think you may.

Find men at [illegible]
[illegible] Stockholm [illegible]
interesting man, [illegible] Sculptor
in the Musée while his young wife
paints in the Luxembourg. [illegible] shall
probably go to the [illegible] Rhine.

And now I must [illegible] pen. Stick
[illegible] to [illegible] here [illegible]
[illegible] you [illegible]
[illegible] Talent
and capacities [illegible], perhaps you [illegible]
[illegible] his [illegible] suspicious
temper [illegible] say [illegible] is on
jealousy; He thought himself [illegible]
persecuted, was too proud to do any
thing for his living, was extremely
poor and left in the fall for England
or America, nobody knows any thing
about him; and they tell me, that
it is [illegible] will not call
either on you or me, considering
us also [illegible] — I hear
again, in this great Babel, tell me
that he really is somewhat badly [illegible]
course he will not work in [illegible]

Kew Aug 25 1857

My dear Burton

On the point of starting I must write a few lines to you to tell you, that I have been here for two weeks very industrious very much pleased, and hope I have obtained good results. The Hookers have been very kind and obliging and have assisted me — every way. Grisebach is here since a few days; he has corresponded with you I see, and expects wrights plants via Hamburgh he has given me his Flora of the Antilles for you. — How is Wright — has he done anything in Cuba or in Carthagena etc, Hooker complaining of his live plants being miserable so it would not be safe to send any of them to Germany. — Harvey had left Kew before I came here — Dr Griesse was here three days (going to Ceylon & Java for 3 years). Dr Alexander I oft saw here; Anderson whom I had seen

some living in the U.S. As he is a druggist he can, and may finally become a botanist there again. — We have to talk over a good many things when I come back, which will not be before April I think.

My regards to Mrs Gray

yours ever

S Engelm

in haste!

in Paris left just when I came. — Dr Hooker was here with me only a few days —

Curtis are only so so here — very striking specimens from their sign but not many novelties or great variety. —

But the Museums I would say are the pride of Kew.

Now about Euphorbias: That plant is certainly Aitons E. prostrata (sent by Lindheimer, Hale, Drummond — I had provisionally named it so.) I have seen also Kew specimens in Brit Museum when Mr R. Brown was extremely kind and communicative. Scott I saw also — and poor Carey. I blundered up and rendered with him — it is really painful to see a man so broken down as he seems to be. He was quite overcome —

Cuscutas, according to Brown and Hooker advise remain as they are. — Scot. Grammica, Cuscuta, Monogynella etc — Monogynella texana will have to bear the name: Cuscuta gamostyla Curtis communicate Natt is the real C. Californica Choisy, and that I had named C. Californica (Wright, Hermann) will have to bear Durand's unfortunate name "subinclusa"

This will set your right for the present in regard to Cusc. of the boundary. —

No change in Euphorbias I believe

I got two letters from you here, an old one and one of July 29th — have written I believe, last from Paris!

I separated there from my family who went to the Rhine while I came here, I shall now join them for a trip to Switzerland where we will be about the same time we were on the White Mts last fall!

I include a hasty scrawl for Torrey.

At Vilmorin's (charming people) I saw your Dr Kane metamorphosed by Greenland, whom you know I believe is going to lose his place there, and asks whether he can get —

Boston, April 26th.

Munich Nov 10th 1857

My dear Gray

a long silence. That! and I long to hear from you all, since everything is rocking to and fro over the water yonder. Mailing told me that Putnam had failed, and that you might likely suffer by him. And how are our friends affected by this whirlwind. which shades everything with you a good deal worse than the political agitation of last year, and will I hope help to drive out that very unnecessary excitement – especially as you are going to have your own way now in Kansas, to which I say Amen – Strong my views have not been altered in Europe. I find people is I won't write about this subject any more.

Since I wrote last I have been to Switzerland and in climbing mountains and braving storms I have felt real delight, felt the physical energy increasing and vigor and health returning, I can-

I shall buy for Mr Shaw the lithographs of the last Crystal Palace, and of Stuart, and bring them home with me – perhaps also some photographs.

I will you advance the money necessary? – I am anxious to see the work. I have seen another copy of this Ext. report, it is not here yet. – and how is the boundary going on? My Carter plates are advancing slowly but they are very fine. –

Have you been to Montreal? J. Candolle will have sent you his complaints thereof; when I left 3 weeks ago he had not yet got a box promised by you a year ago (my lectures in it!) and sent off months before. And I have never got those copies of the Synopsis which you was to send after me by the Smithsonian.

This slow management of the Smithsonian packages I hear many where complained of. – These people here, about to begin to go ahead too – don't want to leave that entirely to the Yankees.

I shall go now to Vienna and then to Italy. You see I will have every thing before I return. Our best regards to Mrs Gray. How is Miss!

Yours ever truly G. Engelm

not say, but ~~felt~~ renewed and refreshed. I could not get out of Switzerland; the last days of October found us still there, and perhaps we would not have left it yet if it had not been for the fogs and rains ~~etc~~ and the short days, which at last succeeded in driving us off. My wife and boy climbed along with their alpstocks that it was a pleasure to look at — and you and Mr Gray would have laughed ~~at~~ if you could have seen us climbing the Mont Tenerd in the thickest snowstorm, botanizing by the way!

I left my folks at Geneva and hurried to Bonn where at the meeting of the Naturwissenschaftliche Verein I met many old and new friends; then returned to Geneva, made excursions from there, worked with De Candolle and at Boissier's went to see Boissier himself at Valeyre — and finally came here, just too late to make use of Martius' invitation to come to Schleedorf. The "couple" Martius and daughters are very kind — and we shall spend again this evening there — He can not yet entirely get over his separation from the botanical Garden etc and feels quite sore about it, though it has given him much more leisure to work at his proper department, the palms and the flora of Brazil. Dr Schultes who has known you at Leyden, an odd but very obliging sort of a man, sends his respects, Martius says he has written to you a few weeks ago. — I shall go on filling the sheet without saying anything about the essential points in your letter.

I have not seen anything of your pairil brought by Seemann nor do I know that he or it has arrived; am very anxious about it. — I expected 200 copies of both papers on Cactaceae with the plates, as I was promised them; whether I get them or not I do not know; at all events I should like to have the stories preserved till I come back — if that can not be done I will risk to have 200 copies of them (Bigelows Cactaceae) struck off. Can you attend to that?

(but perhaps you have done so, as you promised in your letter of Sept 8th to send by Brenan steamer "the whole concern".

I get no answer from Hooker and can not hear of Seemann, nor does Spruce ever answer my letters.

You never mention your young draftsman — how do you get along with him, and are you able to continue him in your employ.

You seem a little displeased that I did give up Grammia at Hookers and especially Browns recommendation and not at once at yours. I hope you will not think that I do not value your opinion and advice very highly, but I wanted more to overcome my inclination to treat the genus as the allied genus Convolvulus had been treated and split on precisely the same reasons.

I can tell you however that Duncan Dallas has confirmed me since in my good purposes.

Torrey has written me a friendly letter to New in August, but not since nor has he given me any order,

or requests about his Paris business. —
— Since I am away from there, they do treat me badly there and procrastinate my work excessively. — I am getting sick of this distant work.

Bigelow has not answered my letter, neither. I do not know whether he is mad at my pruning down or what it may be.

I shall take the set of Wrights you mention, but would not recommend you to pay him. — only pay him what you have for me, for the balance of $30 he must wait till I return —

Is the Carey and Agassiz also suffering by the Crisis? Will A. come to Europe in Spring? The papers report his refusal to go to Paris as Prof. of Geology. Nobody has seen his work yet. Is the first vol. out? Remember us to them.

I have offered to Gisebach to do the Cassiterites and Euphorbias of Wright for him but get no answer. Has Wright Cactaceae?

What is he going to do next?

I hope to get better news from you soon — do not fail to let me know about the financial circumstances of yourself & friends — I hope Mr Jackson will recover some thing at last. — Kind regards to Mrs Gray

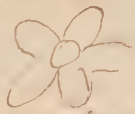
Yours ever G. Englemann

Notes made in Herb. Gen. Paris Jardin des Plantes 1857

Gonolobus virens R Br = Cynanchum hirtum Mx (Michaux

[illegible] in the [illegible] flow. & plant [illegible] fruit;

lobes of corolla obtuse ovate



G. macrophyllus; [illegible] specimen (cynanchum macr)

also one from Short, sent by Sprengel 1839. [illegible]

[illegible] Tenn; lobes of Corolla pale

[illegible] with ?) linear, very long

umbell very many flowered.

sinus of leaves almost closed

[illegible] Gibbosus

[illegible] Tilia [illegible] leaves like some

but with smaller umbels and much flowers

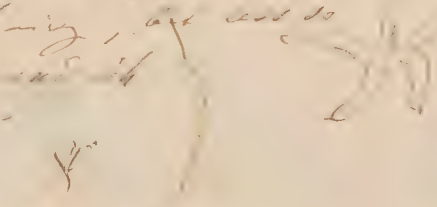
[illegible] [G. macrophyllus ? flowers]

greenish purple. Also [illegible] 1834

stem also retrorse hairy, [illegible]

leaves smaller

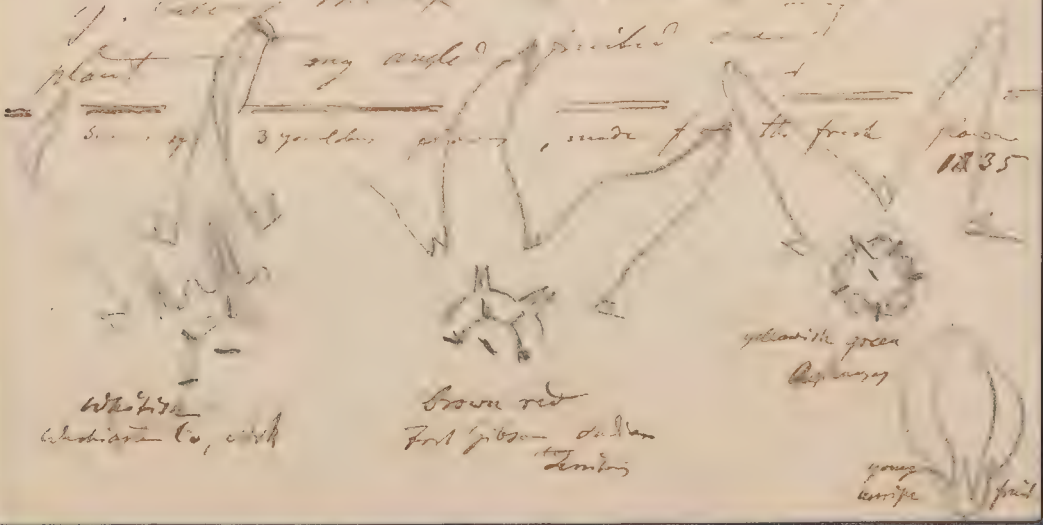
sinus also closed



G. [illegible] Mich. [illegible] green flowered

plant [illegible] any angled [illegible]

[illegible] 3 yellow [illegible], under [illegible] the fruit [illegible] 1835



with a package in paper
barrier of the common Ame
not rooting nor adhering its sucking tendrils
— and a larger number of small berries
of the climbing, rooting and sucking
Mr Sargent may try & see whether the

now. — it was quite severe for a few days and seems to make the tour of Europe.

I must say I feel a little ashamed to go on and travel and spend money as if nothing had happen or could happen, while others suffer and contribute. But such an opportunity will not come again, and once more on the other side of the Mississippi, I shall be tied down sure enough.

Only think that I have not got those publications from Seemann yet! And I can not see them in Germany. Braun and Zengl have both got your Gunnison and Pope Botany, the latter without plates, but nothing of Whipple's, and I am so anxious to see that! In fact I have delayed writing in the hope of being able to see that at least here in Vienna.

Zengl says that Elliott is not in Vienna, and is very anxious to obtain it.

Do me the favor and send Whipple's without franking by mail to me and another to Prince Salm (frank'd at my expense) as I believe I wrote you before. — But send the plates along.

for Gray

Griseb. says that Commelyna agnata Kunth is the same as C. Cayennensis Rich. — I have his Vegetation der Caraiben for you.

I find a beautiful and curious Euphorbia in Jamaica — apparently undescribed; figured as Dicrum oppositifolius Sloan 201. 2
Dichrum aphyllum Plum 234. 1
I name it E. thipsaloides. —

Has Wright many Cact. Euph & Cacc? What is he doing now?

Dr Hilgard writes me that he has sent you a number of plants of our St Louis Bryonia which Mrs Dilmoria and Mr Gray are so desirous of obtaining. I hope they have safely arrived at Cambridge and you will return one or a few and send the balance forthwith (or in spring?) to Paris. Charge me with the expense. I owe much kindness to both lady & gentleman, and am glad to do something for them. —

I can not get the things you gave Seemann for me, have written to Hooker for them again.

Do me the favor to send a copy of the Report with Dr Torrey's Cactaceae and plates to Prince Salm-Dyck at Dyck ~~near~~ ~~near~~ bey Neuß Prussia. It will go under open cover, like papers with us by mail; send it in my name, prepay it and charge me with it

Euphorbia subsecunda from Oregon and E. Notata from Nebraska etc are identical.
E. Poly gonifolia Hook fl. Bor. Am., the western plant, is E. glyptosperma, which remains a good and well characterized species.

Vienna Dec 29 1857

My dear Gray

I can not let the year pass away without letting you know of my whereabouts; and above all, how painfully we have felt your and your brother in laws pecuniary distress. How sadly his poor wife must suffer! He who can say that health remains, can hope and work and conquer. About the same time our poor friend Braun at Berlin has had the scarlet fever in his family for about 2 months, and has lost one of his two sons a most promising youth of 17 or 18 years.

I wrote you from Munich about 6 weeks ago. I left there soon afterwards for Kreuznach and Frankfort and must confess vexitation there somewhat waiting for letters from Stockis. They were not unfavorable in relation to my affairs there, but who knows in these times what the next day may bring. Finally I concluded to trust to my friends there and set off for the South. I spend a day at Leipzig to conclude the bargain with the heirs of the late Prof Bernhardi about his large herbarium, said to include 40000 (names of) species, which I have obtained for our Mr Shaw. I hope it will be a welcome acquisition for our country. I want books too, but S. is not easily persuaded, though Hooker does encourage him.

At Prague we staid a few days kindly treated by the Professors there, especially Hostelitzky. The Haenke an Herbarium is in a poor plight; Presl's perished in with a few more synonyms.

Fenzl sends his respects; he is extremely kind and promises much. I shall have to stay here a week or more, but the season, the short days are unfavorable.

My wife and son have been unwell with the prevailing influenza at Frankfort, but are almost over it

has not been recognized?

By the way, Sesleria Antephora can not be subdioecious, as male & female flowers are so very distinct. I learn from Gray that Nuttall has proposed the name Callanthera, that Benth. pl. Hartw. names it a sect of Triodia and that Nuttall conjoined p 347 calls it Lasiostegia humilis.

I have among Lindheimer another dioecious grass from the Coast of Texas both of which I am studying and intend to publish — Do you know any other dioecious grasses in the U. S.? The Texan one occurs also in Florida I learn from Gray & Carl

I have sent Euphorbia to Newberry.

What is: Fremont, Geograph. Memoir on California and your Colonial Notes to it? I do not know it. — Can you get a copy for me?

Yours ever truly

J Engelmann

If you like I can send you my sketches of Sesleria & Echinospermum before publishing

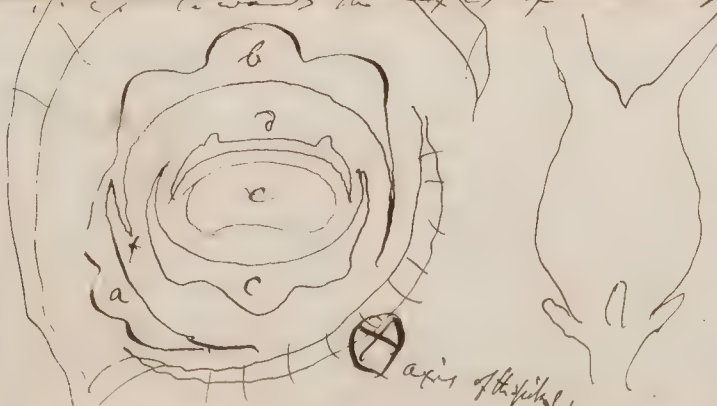
Echinospermum I can not understand well. We have here Lappula, and it also occurs up the Missouri. At Fort Pierre another species is more common which I have taken for E. patelinum. But a specimen from Asia received from Ledebour and labelled E. patelinum is very different and has the deeply umbilicate nuts which I find in other Missouri and especially Texas specimens. These I had named provisionally E. umbilicatum but had imagined that Nuttall might have intended his Cynogl. pilosum for this plant. I am more gratified to find in Pope's Report that you also take this view and say it is E. strictum Nees. — But what of that Siberian specimen?

I see now that my Chenopodina is your Ch. Moquini, and that Moquin already notices the single or triple flowers and the 2–4 stigmata — but what about the horizontal or vertical seeds? — Is that a mistake of mine? and the subdioecious flowers?

The only way to satisfy ourselves about the identity of Sesleria dactyloides and Antephora axillaris is to sow seeds — I have 2 grains which seem to be ripe and shall try to germinate them. I find the plant also among Hay Dens's

Steudel, I see, describes Drummond's plant. But though similar to A. elegans it can be no congener I think, nor even paniculous — unless I misunderstand it, which is very possible, as I have not studied Grasses much. It seems to me to have a much more regular structure, than Steudel admits

2 glumae, each 3 cuspidate, the interior (b) one connate with the smaller exterior (a) one pushed outside, and both forming part of the general involucrum; exterior palea (c) 3 cuspidate, half turned towards the axis of the spike (this point puzzles me — it ought to be turned from the axis — outside?), interior palea (d) bicarinate, half turned outside, flattened seed (e) convex face outside, concave inside i.e. towards the axis of the spikelet.



base of styles distinct not united as Steudel's generic character has it

3 rudimentary filaments

these three bracts do not exist — or rather enclose 2-4 spikelets — the free point, f, of interior glume is always present

St Louis April 14 1858

My dear Doctor

I was most pleasantly surprised to receive another letter from you so soon — and perhaps you was not less startled to get message upon message from me. Such mighty changes in inveterate habits a little grass can produce! Not we are not at an end yet, with Ateleophora and Sclerin, and I must write again. Steudel is wrong in one thing or rather in many — the grass is not pilosa but ciliata-pilosa — (or is Drummond glabrous?) the involucrum is not inaequaliter fissum, but regular as I represented it on the next page; and glumae & valvulae omnes are not inaequaliter, only what he calls involucrum, as indicated in f. —

Note on Chenopodium you will find on the other page.

I inclose an Amaranthaceous plant from the upper Missouri, what is it? Among Hayden's are also Krascheninnikovia — may the female be also so distinct in appearance that it

and itself in charge of the Office
no nothing about these affairs —
that Lieut. Michler and Schott are
at Panama I have seen in some
paper. Meanwhile I am paying
the artists from my means and
do not get reimbursed. (as the first instalment) — nor do
I even know whether the plates sent
to Washington have arrived there.

I believe I told you that I have
bought Isernhardi's Collection for Shaw;
I have since bought for him a number
of botanical works selected by him
~~a number of~~ some valuable ones amongst
the number. He writes me that he has
sent you a plan for his grounds
rather stiff it seems to me — a liguus.
I hope you answered him encouraging
him in general and giving you advice.

~~After~~ Naples we were much thrown
together with a friend and student of
yours Mr Ch. Stone of New York; we
visited the islands of Capri and Ischia
together met on Mount Vesuvius in
view of the eternal flames etc etc. from
his conversation I was pleased to see
that your instructions were not neglected
by him.

What is Wright doing? I long
to hear from you and yours.

Our kindest regards to all of your
and fully your G. Engelmann

Florence May 2d 1858

My dear Gray.

a rainy day, which prevents
me from going to Fiesole to see the cyclopean
walls and the splendid country, and a Sunday
when I can not see the Museums (here
in Italy as in England America or Prussia
— this rainy Sunday gives me leisure to
bring up my correspondence and to re-
mind old friends who seem to have lost
sight of me, that I am still among the
living.

How long, how long is it, since I have
had a card from you. It seems to me
that your last letter dates back as far
as October or November — and my last
was if I am not mistaken written
at Verona, about New Year, 4 months
hence!

You ask what I have done since
travelling about! — Enjoying all what
Nature and Art can offer in this
favored country — but working?
working very little!

A letter of Fendler some months
ago, referring to some notice of
me received from you made me
quite ashamed; he thinks I am
working hard, and studying day
and night — and here I am scarcely
thinking of any thing but enjoyment.

No -- it is not quite so bad, but the fact is, that I can now scarcely conceive it possible how I have lived for months in Paris and Berlin and seen so little there of the treasures of art accumulated there! I have a great mind to go again and do better! -- But I have already overslepped the longest time allowed for my absence. I confess that I am getting a little fidgety about my affairs at home, my practice and especially about the protracted absence from school and regular discipline of our little son. He however takes the liveliest interest in every thing he sees and visiting classic Italy may prepare him the better to enter into the study of the classic languages. He takes great interest in botany too, and has begun to form a collection of his own.

At Naples I have become acquainted with good old superannuated Tenore and with the extremely kind Gussone. At Rome they seem to have no botanist, but here at Florence, where Webb's collection and library are highly prized and worthily kept, and where the Grand duke himself is a great friend and patron of science and botany especially much interest exists for it, and Prof Parlatore is a very zealous and active man; so one feels again in working and I have spent many hours in the fine hall, with some benefit, I hope, to my scientific pursuits.

We have met with Ida Agassiz in Rome, and were much pleased to find her so much better looking than at Paris last summer. Through here we learnt at least that you and Mrs Gray were well, we shall probably cross her father on the Atlantic -- but my plans are too unsettled yet to say any thing definite about our home voyage. I do not even know yet whether I shall be able to go to England again, as I fain desire.

I have not heard any thing of Seemann or the things you have given him for me, nor have I met with Whipple's Cactaceae any where.

My engravings at Paris progress very slowly, and from Washington I can learn nothing at all. I suppose that Maj. Emory is somewhere in the field, perhaps in Utah

Paris June 1st 1858

My dear Greg.

In Paris, yes! but not yet on my return trip! but I must write you to tell you that that box has safely arrived just on the day I left Frankfort last week. Your letter I got a few days before, when I returned from Italy; — but Italy is now a long way behind me and Switzerland with her snowy peaks and snowy passes — You see I am getting melancholy — almost! —

What a trouble you must have had and what a chagrin with this (If it would not hurt your feelings too much, I had a great mind to cause a little) report on Diplomas Cadaver — One should never put so much and so disagreeable a labour on another's shoulders — and this other a man whose time is certainly more worth than to dig about in such things! — And then, after all what a botch they have made of it! I have taken half a dozen copies with me to distribute here, but when I looked at the print I found it so full of typographical errors and negligences of every

Pray me mon ami give my compliments to Mr Greg. my wife is on the Rhine.

to you with the request to transmit them at the proper season here — Have you got them? and what have you done with them? — — I told him all that, and promised to see in the fall myself to it — „Mais c'est trop fort, c'est trop fard," said he in a thundering voice „car je suis accouché à présent" and so on.

I shall now go back to Germany work a little there yet (I have just received the Russian Carcanet from Petersburg) distribute duplicates to all those who have been so kind to me, and return here in 6 weeks to bid Paris good bye — to sail, I expect July 27 in the Arago. Whether I can get to Frankfort yet I do not know. I doubt whether I can go to England again

This letter will reach you before Agassiz leaves, give him my love — we shall probably not meet in Europe. I dine at present with Bonaparte near Aix la Chapelle. — My wife is on the Rhine.

Write soon, as usual, to Frankfort.

Yours ever

G Eaglen

sort that I first commenced to correct them — but I am not half through yet and so I have kept the whole in my trunk!

I have come here after my Emory's Engravings, and was overjoyed to see them so far advanced that I can bring along the 12 plates in July, when I return, and have to leave only 4, which can be finished in 2 months more.

But I can get no letters nor hear a word from Washington. I have sent plates in Sacramento and do not know whether they have arrived, and my letters remain unanswered. So I have taken the liberty to ~~write~~ include a letter to Emory to Prof Henry, about 4 weeks ago and hope to get from him some definite news.

Meanwhile I learn from Prof Mettenius that through an application of Consul Flügel at Leipzig Prof Henry has consented to have the Bernhardi-Herbarium for Shaw shipped to the Smithsonian Institution which will obviate many difficulties

I learn here that Agassiz has most magnificent ~~letters~~ offers from the Emperor. He is not only to be a Professor, but is to reorganize and superintend the whole natural history study here, the Jardin des Plants, Museum, Professors etc, and besides that he is to be a Senator (for life) with 30000 f. He must be very firm to resist but I doubt whether his science or his happiness or his family's health can be benefitted by such a change — I doubt it this entire news.

Your name was often mentioned here — Mad Vilmorin is doing the strawberries for De Caisne's work and has just published Fragaria Grayana, the wild F. Virginiana which is described by Ehrhart as not known in a wild state, so they say. — Gay in his amiable noisy manner attacked me most violently when he saw me yesterday that I had not sent the living St Louis plant. I put it on your! Hilgard wrote me that in ~~Novembre~~ last he had sent living specimens

I have kept to long writing. Perhaps it is as well that I first commenced to correct them — but I am not half through yet and so I have kept the whole in my trunk!

I have come here after my Emory's Engravings, and was overjoyed to see them so far advanced that I can bring along the 12 plates in July, when I return, and have to leave only 4, which can be finished in 2 months more.

But I can get no letters nor hear a word from Washington. I have sent plates in Sacramento and do not know whether they have arrived, and my letters remain unanswered. So I have taken the liberty to ~~write~~ include a letter to Emory to Prof Henry, about 4 weeks ago and hope to get from him some definite news.

Meanwhile I learn from Prof Mettenius that through an application of Consul Flügel at Leipzig Prof Henry has consented to have the Bernhardi-Herbarium for Shaw shipped to the Smithsonian Institution which will obviate many difficulties

Send it again here

Dick's Hotel — or perhaps in N York or at his country seat? We shall be very happy to see you all. Shall stop in N York a few days, to settle with the Custom house officers and other pleasant work of that sort, and then I have to go to Washington, and try to arrange with the Boundary office, which will be difficult enough, as Emory is in Utah!

And now farewell — & pray a happy meeting on the other side of the pond! — I long to get home again but shall get into an unpleasant state of affairs there — the cries — the floods — sickness — and the lamentable state of political affairs!

But now adieu

Ever yours

J Engelmann

My respects to Mrs Gray.

Frankfort, March July 18th 1858

My dear Gray

Your kind and welcome letter reached me a day or two ago at Frankfort, where I am head over heels busy in packing up. I have just come over to this place to bid adieu to my venerable mother and to my sisters and shall leave to morrow for Paris and a week after for Havre.

I am very sorry indeed that I could not get the time to see the Hookers again and to finish my studies at Kew, but it was impossible. Even as it is I feel that I am doing injustice to my friends and even to myself to work all day in arranging collections for distribution and in packing up, while I might be with them and give them those hours, perhaps — ay — most probably — the last which we may spend together on earth —

I & I are growing well united and that will end it at all — off with it!

I'd now about our friend Agassiz — once you came & the Agassiz's waves of line! I have heard some things of Paris especially at Jay's that are not fully posted. I can conceive that he is in a sore dilemma, or has been, & that, even if cool reasoning ~~and~~ or perhaps (what would be worse) other influence have induced him to decline that that apparently splendid offer in the splendid (poisonous) capital of the world at the head of "Natural Sciences" and in a prominent social and political place, would have flattered him exceedingly and ~~is~~ not easily forgotten — inde illae lacrymae!

But no more about it at present. Agassiz' daughter has been at Berlin and they have been delighted with her. Mrs Agassiz writes me that she will return in a month.

I will add only that I hope that Agassiz' refusal of the Paris offer will be properly appreciated in America and he will be enabled to forget what he loses in Europe.

It is the opinion of most of those who know Paris, ~~that~~ that ~~it~~ that that situation in Paris will kill most any man who will try to do his duty there, and that it would not be the man for it. —

Mr Ticknor "entre nous"

We shall leave on the 12th on July 27 and hope to land at NYork Aug 7, 8 or 9 — It would be very pretty to find you there.

At all events I shall hurry to the Postoffice for a letter from you, and we shall probably stop at the Prescott house (now, or 2 years ago named

St Louis Sept 28. 1858

My dear Gray

I am barely existing here, and that must account for my not writing sooner. A week or ten days in an expensive and noisy hotel, since there is an inferior Boarding House (the city being crowded, and no room to be found) engaging and superintending the mechanics in repairing and fitting up my house, which is not finished yet, at the same time preparing for the resumption of my practice, having only the most necessary social intercourse, and thereby offending many touchy people --- so you see I have to pay by two months of purgatory for my prolonged absence; by no means a pleasant beginning, Nevertheless I must say that my friends received me with the most hearty welcome and patients are coming and calling on me, more than I like at present; ~~Fathers~~ my house and

is no working room in the whole building if it be not the basement.

The building is to be one large Hall with galleries, and two smaller rooms one above the other, attached to it — these are the Hist. & Libr; — a basement under the whole. —

Mrs Engelmann sends ~~her~~ love to Mrs Gray; she will write to her, as soon as she feels more at home —

Georgie goes to school and seems to be quite satisfied — pleased with this new phase in his life.

Yours ever truly

G Engelmann

I have collected Aristid. specimens in abundance — do you want specimens?

especially my office and my herbarium and library I am getting into much better order than before, so that work will be more pleasant and more expeditious: so I hope at least. —

I hope you have not yet sent off the boxes, as I have no room for them yet, some time about the middle of October will do fall well. I have been told to send them "by Pennsylvania Railroad, rail all through Ohio & Mississippi R.R." directed to F. Reuss & Co. —

A few weeks ago they charged from New York $1.25 per 100 ℔, while the Express charges $5. —

Still, on consideration, it would probably be safer to send by Express as I learn that these goods for the Pa. R.R. go from Boston to Philadelphia by schooner, and you have the trouble of sending them aboard etc etc. —

Send therefore by Express.

I hope you and Mrs Gray have returned now to Cambridge and feel both restored by your too short journey.

Mr Shaw is very busy in preparing his Botanic Garden; he has built a fine stone wall around 10 acres of fine slightly sloping ground; prepared cisterns, walls, drainage etc etc — is building a greenhouse of considerable dimensions (he has already several small ones) the Garden itself is ~~not~~ nearly empty yet. He builds a fine entrance, porters or gaurdian's lodge etc — I suppose in imitation to English parks; he is puzzled about the superscription, which I found was to be Hort. Bot. Missouriensis.

I advised him to have it in English Missouri botanical Garden, as less pedantic — and not to abbreviate the principal words. — You see how tricky ~~take~~ occupy him (and us!). —

He is much obliged to you for the Australian seeds. —

He has also prepared his plans for a Museum, library and Herbarium; of course according to the new plan — but unfortunately he has had the plan of the old Museum only, and worked and planned on that! — the rooms, 1 for a library, the 2d for Herbarium are too small, and there

St Louis Oct 24. 1858

My dear Doctor

your boxes came to hand a Day before the letter announcing them! I have been unable to unpack them yet as I am still unfixed. While I have been busy in getting my house in order and to arrange the room where I keep my herbarium and books better, safer and more convenient than it has been before, my professional occupation has been gradually increasing though I have avoided to advertise my return to St Louis, and I find devoting a good deal of my time "volens volens" to the practice of medicine. The illusion of increased ease and leisure is fast dissipating!

Has Grisebach done any thing with the Cuba plants?

How does Buckley — does he dry plants also?

Where will Wright go to, and when — the same eastern part of Cuba? He should not forget

put to the account of travelling-expenses. The boxes were in a dilapidated condition when they came here — and must have been very roughly handled —

I shall write more and work more when I am quietly settled down. My and My wife's kindest regards to Mrs Gray.

Has Dr Asgaing returned? How is she, remember us to her and her father if you see them.

Do you hear from Hooker? What is the Doctor doing? —

Yours ever truly

J. Engelmann

What kind of a man is Tatnall young, old? industrious, faithful? veracious, accurate! jealous?? What his profession?

Cactus fruits and seeds; full notes besides specimens.

Thanks for the communication about Sagittaria. I was unaware of the large size of these bulbs — but the tubers themselves are well known to our ducks, who fill their stomachs with them. I noticed these bulbs as the end of stolons repeatedly and again at Cambridge, in fresh pond, where I think we examined them together; those were small, however. Our Sagittaria stolonifera & N. Lindh. (= S. gramineaeea) is another instance of stolons but they grow at once (in a southern climate?) to be leaf bearing plants, with roots &c. But this question has induced me to look more closely to the rhizome of these plants. It seems to me that most probably all the perennial Sagittarias occasionally or usually bear stolons, but that we have also annual Sagittarias, and that perhaps my S. calycina and S. pusilla are such annuals?

It seems that the high waters of last summer prevented the germination or development of S. calycina this season, and consequently all the plants which I could find (in the same little pond explored 2 years ago) were very small, "pusillae" — often even unflowering — not a single large plant which were abundant in that spot two years ago, could now be found. Have they all been destroyed by high water, drowned out, or do they die every fall? The plants should be cultivated and studied in the garden. — Some Alisma seem are certainly annual, so even little Echinodorus parvulus.

Shall I return this letter to Prof Dwight? Yes!

Mr. Tidnall wrote me some time ago enclosing some Cuscutae and an Isoëtes which looks very much like our Missouri plant. I have not been able to examine it yet, so as to answer his letter.

The boxes cost, as you supposed a heap of money — $18.60, which might have been employed better — but all that must be yet

St Louis Octob 30th 1858

Dear Gray

We had great pleasure yesterday, unpacking those boxes! How all the contents reminded us of our stay with you, of the Botanic Garden, fresh pond, the White Mountains, and so forth!

But — you know there are always bats but I find also how small my room, and what is still worse how limited my time is! — I am in the practice of medicine again — and though not fully occupied, find that those delightful quiet morning hours are gone pro occupied! — Well I shall see.

You know that Feuchter has arrived. He seems to be willing to stay here and try some business

I am very sorry that I can not do any thing for Caspary here, in Nymphaeaceae. The high waters seem to have plagued the dickens with these water-plants!! no fruit!! drowned out! in some places

He desires me to copy for him Rafinesques article Nymphaeides in American monthly magazine 1819 p. 193 which he can not find in Europe today.

Can you lay hand on it and have it copied by some body at my expense? You would do me a great favor.

You told me how much I owe you for Wright — but I have forgot — tell me at once and I will forward to gether with the above amount for copy. —

Yours

distilling or something like it.

Shaw's herbarium has also arrived. Fender with his sense (in Webster) of neatness and order would be a capital Curator, and could be spared occasionally for excursions to Utah etc. but I do not know whether Shaw would enter into such a plan. I must be very cautious in approaching him. The herbarium to him is a very secondary thing to the Garden.

I miss in the box the Mosses of Lesquereux which I bought when in Cambridge. I believe I paid the amount to you. But do not know whether they have been sent to you, or whether I have to expect them from Columbus.

Have Andersson's plants arrived? I have a letter from him, that he could or had sent them to you. ——

I find that you have at the College a young friend of mine, Edw. McCabe, the eldest son of a deceased physician, one of my earliest and truest friends in St Louis. I doubt that he has any taste for natural sciences. His mother tells me that he intends to study law.

I begin to feel a little more at home, and am now commencing to arrange my herbarium — a herculean labor. I must needs do that — but believe must work my Acrita material into some shape before any thing else.

My wife's kind and regards to the, Prof.

Yours ever

G. Engelmann

Prof. Gray

As to your medical question, I can not say much.

Yellow fever I know personally only from sporadic cases carried up here by steamboats. Our Climate fevers are rife among the old French population which abounds in the miasmatic districts of the American Bottom, so that they are certainly not exempt from those influences; — whether less liable, I can scarcely say, but believe not, under equal circumstances. Many of them live there since generations and a sorry set they are with sallow faces, tumid spleens and livers etc. If a light complexioned (teutonic) person gets the fevers easier, I would ascribe it to his being less acclimated, or to his exposing himself more.

I will make further inquiries.

Our kindest regards to Mr Gray and to the Agassiz family.

Ever yours,

J Engelmann

Among Hayden's Plants I find a flower & fruitless plant, which must be an Ottinella new to me, not in flow. I propose to name it O. palmata. I include a fragment.

I am now busy at making out a Catalogue of Hayden's plants, in which I shall also include your description of Nasturtium calycinum. — Lieut Bryan has published his report before he got your list of my brothers plants. — Have you got Oxalis oppositifolia? It is also among Hayden's plants.

—

St Louis Dec 16 1858

Dear Gray

Your letter of Dec 3 was received a few days ago ... and I find some others unanswered! I am not myself again, still busy in getting into something like order and comfort, and the same time getting into complete jeneture again. I have not begun to work yet, i.e. in Botany, with the exception of a Catalogue of Haydens plants, commenced years ago, whence the above notice. he writes me however that his catalog will not be published in Lieut. Warren's Report — so the Nasturtium floats about

again.

I suspect some other undescribed plant, in that collection. An Astinella I have mentioned above. I include a fragment in this letter, as also a specimen of an Antennaria. Is this A. dimorpha Nutt? — A Senecio, scarcely a span high, almost glabrous seems to be very similar to a white-tomentose one, which may be S. canus, but with even the upper leaves entire or denticulate, never pinnatifid. You will get specimens of all off them; give me now your opinion, if you can form one from the fragments sent.

Sequoyah has sent the Mosses.

Among Hayden's plants is certainly also Cissium canescens Nutt, which as you suggest looks very much like C. undulatum, but with decurrent leaves. Another interesting acquisition is Lactuca Ludoviciana, of which I send a head; a very distinct species! have you got hold of it since the publication of Flora, when you & Torrey considered it doubtful. —

I must run through your letters which lay before me unanswered.

So you think that I belong to the democratic party to use it for private purposes, you Yankee you! You take me for a trading politician! Fendler is intent on making Campbell here, has bought a lot out of town, built a little frame house. If he succeeds and makes money he probably will not go collecting again. He looks old and worn.

Shaw is unapproachable at present, has a breach of promise case on hand, damages laid at $100.000 — probably a swindle, still there must be some excuse for it — so you see bachelors are not quite so independent and master of their fortune as they may consider themselves. —

My brother has again sent seeds of which you shall have your share. He winters at Camp Floyd — I will probably go to California next season. His plants of last summer will be sent to me to name. I shall have to ask your assistance.

I see very little of Vendlan.

Thanks for Rafinesque's notice of "Nymphaeites" letter that it is short!

St Louis Febr 25 1859

Dear Gray.

Thanks for the information received from you about the paper makers.

We want 12 reams yellow paper (genera covers) and 24 reams white paper, for species, single sheets.

The genera covers to be 18 by 24 inches or folded 18 by 12 the white paper 18 x 11½ inches.

Shaw is laying the foundation of his library and museum (à la Kew) and herbarium now, it will be under roof probably late in the fall; before that time the Herbarium can not be opened nor any attempt at arrangement be made. He is also very industrious in getting the preparations for his garden in Koenigsley and Mettenius of Leipzig as I find leisure from Hayden's plants I shall go at those two dioecious grasses again — but what name to give them, among the many proposed without knowledge of the genus? The "Leslerii" has nothing to do with a Cypsis or Muroa.

The Schizospermum of Lindheimer looks somewhat like a specimen of E. patulum I got from Siberia, (Redebour) but does not agree with the description in DC. — but there is a common one among Hayden's plants (the most common one) ~~with~~ exactly like Lappula, but with only 1 series of areolei on fruit, which according to DC I would name E. patulum; that is perhaps Torrey's E. Fremontii.

Who is the Rev. Carter, drowned from the burned steamer a few weeks ago? not our friend?

We are well and hope the same of you and Mrs Gray.

A letter from Braun tells me that his eldest daughter is to marry shortly Prof Caspary now in Koenigsberg

Ever yours G. Engelmann

of 10 acres, arboretum besides.

The paper to be sent to Henry Shaw, St Louis Mo, the manufacturer to draw on him as soon as shipped. (by the cheapest way, probably New Orleans). When can it be sent?

The Quality to be the same as yours, of which I took a pattern with me.

I suppose with this large quantity — some for yourself added to it — it will be done at reasonable rates.

Since I wrote you I have been occupied in examining Newberry's Euphorbias & Cacti. And in making a report on them. Among the latter nothing new, though fuller data flowers of some species, heretofore only known without them etc

Among the Euphorbias I was sorry to find two, heretofore unknown to me, and both not stipulate but umbellate, both unfortunately without seed, and both something intermediate between Esula with horned or lunate and Tithymaloides with rounded glands! — they are so different from any other N. americ. forms, that I could not help but consider them distinct species.

Since then I have commenced again at Hayden's plants, but should like to get your notes about them, so that I need not pore perhaps for days over species which you know at a glance —.

Bentham's N. Hartweg I have not; and if you can give me a copy I shall be much obliged for it.

Thanks for your notes about plants, Grasses, etc; as soon

St Louis 5th April 1859

My dear Doctor

I thank you for the package which you took to the Prescott house and which Mr Hildenbrandt safely delivered to me. It contained the Cactus we were looking for last Aug. & without being able to find them. Many thanks for them.

Your remark about Selenia is new to me. I have not Steudel's Glum. but find the genus Anthephora (you spell it Antephora – but I suppose it is the same) in Kunth and Lindlehen. If correctly described there, it does not include our plant, which is certainly not paniceous. Has it sterile flowers [illegible] the fertile ones. It is nearly allied, as the male flowers indicate to Chondrosium.

I wanted to consult you about the Chenop & Amaranth of [illegible]

I find among them a shrub, with fleshy clean leaves, turning black. I know that it occurs in other, e.g. Fremont's collections; it may be the Chenopodium maritimum of some

and Tilletyales: — ~~Colon~~ glands of involucre incised or crenate but not horned.

I shall try to lay aside a specimen of Selenia &

Can you let me have a fragment of Anthephora elegans Schreb — or give me a sketch, ~~rough~~ copy of Schreb Gram. t. 44 & Beauv. Agrost t. 13 f. 8. — but it must be very different from our grass.

I did not find it on the same roots for the plant is divicous — but they ♂ & ♀ were mixed together and the roots, leaves, stolons are identical, — besides the evident alliance to Chondrosium or Bouteloua.

Where is Steudel's Anthephora axillifera from? — the name seems not very appropriate.

Give my respects to your Lady and tell Gray, if you see him, that I am not in right working trim yet — hope gradually to get under way.

Yours very truly

G Engelmann

Write soon!

herbaria (Thurber?) but is certainly not the annual of the eastern & Texan coast, known by that name. But this doubt is the least of it. The plant seems to have many interesting features:

All my specimens are female, with occasionally (at one in 500) a male flower. —

One form has single axillary flowers, ~~but~~ in another one they are always ternate.

Stigmata 2, 3 or 4!

Seeds vertical or horizontal!! At first I thought the vertical seeds belong to the single flowered, the horizontal to the ternate flowered form, and ~~both~~ each belongs to different genera, Chenopodium and Suaeda. — Now I am inclined to think that the vertical seeds belong to the 2-gynous flowers, the horizontal ones to the 3 or 4 gynous ones. The specimens are too incomplete to decide this point.

It might be Salsola depressa of Pursh if that was not said to be annual. — You no doubt have and know the plant, — but I will include in this letter a fragment of both forms.

If horizontal and vertical seeds can occur in the same species, much ~~confusion~~ many changes would have to be made!

Among Hayden's plants is also a fragment of Schoberia albicaulis evidently mistaken for the former, but well characterized. —

I have made arrangements for extra copies of my Cactaceae but have not heard any thing of them, nor do I know whether the corrections I have sent to Washington have been printed.

I am much pleased with your proposition to exchange copies and shall try to have yours sent to you from Washington direct as soon as I can dispose of them.

I should like to give up practice but doubt whether I can make a living in any other way, so I have to continue for a while yet.

I have done Euph. & Cact. for Newberry — E. setiloba and numerous forms of E. polygonifolia which ought to be named polymorpha are among the number; and, I am sorry to say two new umbellate ones without fruit! apparently intermediate between Euela

St Louis April 15 1859

My dear Gray

It is a long time since I wrote you last, and I have, I am afraid, never acknowledged the receipt of boxes and packages sent to me. Many thanks for them and for the trouble you have taken with them. Georgie was very much pleased with your nice present, and seemed to study it with a good deal of interest — but at present his school takes all his time, and he does not seem to care much about plants etc.

So you have been in New York. Did Torrey mention the Buffalograss to you? He is no doubt correct in recognizing Antephora axillaris stand. as my female but I am sure that it is the female Buffalograss. I find it now also mixed up among Haydens grasses. — It can not be an Antephora, nor a conquer of that West Indian plant nor a Panicum, I think. Torrey says it is among Bemonts — & Wright's plants. I find it not among my set of the latter.

I enclose another of Hayden's plants which I take to be your Leucocrinum

mountainous from the Bad Lands, but the styles are united up to the short stigmata.

I send you today by mail a number of seeds, mostly received from my Brother, though I am afraid some of them are not ripe — a few may be valuable. I send another set to Hooker by a friend who goes to England in a few days.

How is Wright coming on? No trouble from political causes?

We are in no hurry for the plant paper.

Shaw is busy; I do not know how he progresses, but — he is energetic and business like — could be had more scientific education or taste. My practice leaves me only a few hours a day to other things so that I can find no leisure to go out and see his place, and improvements which is a bar from here as Gray's Garden is from Boston.

Lindheimer's Texas Echinospermum 477 which you told me Torrey had labeled Echinosp. patulum, and which corresponds pretty well with a plant under that name received from Redfield, must be Ech. strictum Nees fide Torrey in Pope's Botany.

I expect you are right — that our plant is E. ambigua — but I do not know then the time Ellis is Myatella.

Hayden's Chenopodium pumilio puzzled me a little — I have written to Torrey about it — Can hairy and vertical seeds possibly occur in the same species? — I mean Chenopodium Mogrini Torrey, which must be Hayden's plant from Bad Lands, Yellowstone etc.

I write in Hurry, and close with a patient by my side to excuse

ever yours

J. Engelmann.

The patient reminds me of Mrs G. how is she — in the commencement of winter she was not so well you wrote — how is she now — Our respects to her — we see ourselves often in your house and with you,

over

Solidago leptocephala occurs east of the Mississippi in the State of Mississippi (E. Hilgard sends specimens.

The Bot Tegon Euphorbia is your E. albomarginata.

take cultivated and correctly named ferns for them from the Leipzig Botan Garden the best coll of China ferns that perhaps is in existence.

St Louis May 13 1859

My dear Gray

Your different letters and notes as also the boxes and packages have all come to hand

Many thanks from Georgie for the pretty book — he will study it well and I do help him. — Thanks also for the Books by Lindley and Bentham. Do not forget me when a continuation appears.

Is it possible to get — Nuttalls Arkansas plants, which I have not?

Shaw wants to construct a kind of Charter, last will, donation or something of the kind for his establishment; his lawyer, will shortly go east and also call on you to get your views about the arrangements of the whole concern.

I was disappointed in the annual income of the establishment; for the first 20 years it will not have more than $10000 annually with which to pay the Curator, the Gardeners, keep up

and increase the Garden, Herbarium and Library. — After 20 years — i.e. after us, the income (from rents) will be much larger. — It is to be hoped that Shaw will live long yet, so as to expend larger sums at least for the arrangement of Garden, foundation and increase of Museum Herbarium and Library. —

The lawyer will converse with you about the properties and Trustees, Curator etc etc,

When and how do you send Oak etc to DCandolle? by the Smithsn? If so it would perhaps be better for me to send mine directly to Washington, to save freight and to save your trouble.

We ordered 12 reams Covers and 24 reams specs. paper.

We will on your recommendation increase the order to
14 reams genus Covers
48 reams species paper.

More than ½ is for myself.

Gray

That Echinospermum I sent you with the excavated rabbit from Fort Pierre need be E. strictum Nees for Torry Rep. Pope. — I forgot, I did not send it, but it is the same as Lindheimer's Echinospermum, which you thought was E. patulum.

Is the Abronia east of the Mountains A fragrans?

Lapham mentions Coispermum hyssopifolium near Milwaukee — therefore within the limits of the Manual.

Prof Metteniey desires some of the rarer ferns of the N.S. which are not contained in his or the Collect of the late Prof Kunze especially the new Trichomanes (gracilis I believe in your Ward Case — I do not have it neither) also the new California Allosurus species descr. by Torrey —?

Onychium? Dawsonii Breck. etc.

Where are the ferns described by Brackenridge and can duplicates be obtained or specimens be loaned.

He should like to enter into correspondence with Mr Eaton and exchange with him. He desires duplicates of Tenders Ferns from Mr Eaton, if he is disposed to

Newberry passed here yesterday — was here only one hour — did not see him. Expect Hayden.

That plant then is not your Leucocrinum montanum? It does not look like a plant under that name call by Fremont. It is then a new species: Leucocr. gamosytlum.

Does Wright collect a full set of ferns for Hettenetz. Let him do it.

And now I must close

Yours ever

J. Engelm.

2 Shaw has no confidence to order a larger amount though he ought to do it and ought to engage Fendler, as soon as he has room, to do the mechanical business of the Herbarium.

I mean to work out now a synopsis of Cercetae for our St Louis Journal — and am also occupied with the obvious grasses, which give me more trouble than I imagined. I can not make out exactly the position of the Buffalo grass, also the nomenclature. I should like to look aside from the herbarium names and name the genus Bubalopoë, and as Darty lordly is so manifestly inappropriate give the species the name: Nuttallii though also „axillaflora" comes in for its claim.

The male plant is chlorid arcuy

without a doubt and the 3 awns or points of the glumes and palea of the female flower remind one of Bouteloua — it is probably possible to reduce the female cluster to the same law of arrangement as the male spike, but I have not yet satisfied myself entirely. I have found from 1 to 5 flowers in a single head.

I do not know whether the exterior rattlesnakeish scale indicates the inner glume, or an exterior sterile Palea, in the latter case it would be panicreous; There are always two sterile scales which are laterally attached to the involucrum a a

The hollow face of the carpophis being turned towards the ~~upper~~ lower palea, and the convex one towards the upper, is, it seems not panicreous.

But you ask how it is that I persist in my opinion about the identity of this male and female? I find a specimen which is monoecious!

So, that is settled! I have it now from many localities, and Lindheimer has also sent it from N Braunfels.

My numerous specimens of Uniola stricta are all diœcious, who has first ascertained the diœcious character of U. spicata and stricta? — The female and male plants look different at first glance! — Is it ever hermaphrodite?

I shall examine it again

There is no opening here at present for Thurber I hope he will manage to make a living in N York. —

I never got Synopsis of Fungi of Expl. Exp. of Rogers

St Louis June 2d 1859

Dear Gray

Your two last letters are unanswered in my hands — Shaw is unapproachable ~~at~~ present His $100.000. — Breach of promise case is on trial just now — But even if his mind should be disengaged I doubt if he would entertain the notion of buying those Brazil plants. I shall broach the matter to him though.

Shaw is liberal enough, to be sure, but then, with an income of 75.000 (it is said) and no family he might do more than give 10.000 annually for his botanical garden; it would be a great deal for the garden but that amount must pay all the personages — Curator, Gardener assistants etc — increase library and Herbarium. I should like him to buy Fendler's Plants and engage F. for Herbarium and

his plans are laid. But enough of these never ending speculations.

I will send Oaks from DeCandolle to you whenever you say so.

I have often and much thought of connecting my Herbarium with his, but his establishment is 4 miles from here (no horse rail road either!) and with my time cut up by my patients I must have every thing around me, if I will work any.

If I see a possibility of connecting myself with Shaws establishment permanently I may give up practice, move out there and then of course unite my Herbarium with his. No prospect for that as yet.

I have sowed a few Grains of Buffalo grass, and I think they are coming up. — But even without doubt prove I am now fully satisfied that the female head is constructed on the same plan as the male spike! It is certainly a grass allied to Bouteloua! But

library, especially as I now find out that he has been too hasty in his gas distilling enterprize; — but for the present there is no ~~doubt~~ probability of his doing any thing of the kind till his "Museum" is built up. which is now "up to the first story", will be done next year.

You ask me what I think of the european war? If you say no good can come of it you may be right as for the present — but these great wars (and this will be one) have been productive of great good always, and are no doubt the means of progress in history; such were the wars of old Napoleon; Germany which suffered so much in those wars can not but be eternally thankful for the great good they brought. the more or less fearful developements of the last 40 years were prepared and made possible by those wars which destroyed the "death like" stagnation of the last century. The Germans especially however are now divided as to the policy to be pursued next — some think that "the Rhine ought to be defended on the Po" as the french plan would be the same as old Napoleon's — to crush one after another his antagonists, that Germany would come after Italy, and that Napoleon must be fought wherever it may be, at once and crushingly — — others, and I among the number think that Italy has been a drawback and an incubus to Germany since a thousand years and that we should thank any power to relieve German austria from this burden — that reactionary papal austria ought to be weakened and that the Rhine ought to be defended when attacked. — Some ~~think~~ that Louis Napoleons great aim is the revenge for Waterloo and Saint Helena and St Helena especially and that England will be humbled by him as soon as he has disposed of other enemies, and

to those who have bought the Collections!

Can not somewhere a Catalog be published now?

2/

more than that, Munroa is also! the 3 spikelets are inserted sessilely on a Rhachis — it has elongated stigmata etc — and last of all — the texan coast grass is the most reduced form of the same tribe a Chloridea without Rhachis and without spike, with a terminal single spikelet!!

They are perhaps the 3 most curious grasses of the U. S.

Hayden has been here, and is gone west, left me a large box of some good things with a mass of disgusting rubbish.

Some named by you are on that account valuable to me though few of them only are of greater interest, or new to me such as Aristida hirsuta. It seems he can not be made to prepare specimens collect with any thing like taste and neatness. He seems only to care for a vestige of each species, so as to get

every species and from all the localities.

Engrotis reptans I find also in female plants with hermaphr. flowers but will pay attention to the living plant.

Thank you for the "Fragi" etc — your discussion with Agassiz is very interesting. also distribution of species etc

I have written to Torrey more fully about these grasses.

I will change the name to Bupoa and if you seriously object to Nuttallii, we must retain the name of Dactylesides; axilliflora is wrong, as the flowers heads are terminal!

You have given me the synonymy of the plant before.

The other grass, I believe, you told me Nees had named in Hookers Herbar Chloanthes "green flower" what does that mean? Some other name would be better. Would Monanthochloë be too long? — Yes! the single terminal spikelets are so characteristic.

I hope Agassiz will be better after a trip to Europe. Do the daughters accompany them? I write to him to day — and Mrs Gray? I trust the pleasant summer weather does her good.

Yours ever truly

G. Engelmann

I see that the Boundary work is out — I was pleased to see the working up of so much new texan and N Mexican material — but what a pity that the whole of N. Texas and N. Lich. could not have been given individually, and all the numbers be referred to. That might have been done at once! It is done

St Louis June 15 1859

Dear Gray

thanks for the fine things you have sent me. You say you do nothing but accomplish so much! This paper on Japan is a most interesting one not only in itself but principally on account of the great importance it has in relation to the question of propagating & distributing plants.

How long do I labor to bring forth those few things about Grasses! I am quite discouraged! And am afraid that after all, what I give will be found too lengthy, broad & unnecessary — I wish I could let you read it first — but it would be giving you unnecessary trouble as well as loose time. Printing and engraving will go on fast!

you advise — indeed half of the paper ordered, or more, is for me. I intend to have it in the same style as Shaws so that at a future time they can be united.

I am thinking much about it whether I should undertake the directorship of such an establishment with all the cares & duties, but there will be years yet before such a thing can be accomplished.

The Grasses will be called Buchloë dactyloides and Moranthochloë littoralis. — You told me the latter was named in Hort Kew by Mr Cloanthes, shall I give that as a synonym?

If chloridceous grasses can have single terminal spikes, Munroa is one — they approach the Sesleriae which must be separated, as Koch has done, from Festucae.

We ought to find means to do the list of Fruits & Lichens pl. Have you not somebody who could extract & copy what is necessary? I will try to do it, but not yet. Corrections

Our best regards to Mrs Gray

Ever yours G.E.

Mesquite, Tickoma etc

You keep — Pepper hole for me!

in the next 2 weeks, and I hope the latter will be creditable.

Did I ask you to get me if it can be done without trouble, the Athamans Plants of Nuttall? They seem to be rare. In a letter from Boissier, rec'd a few days ago he seems to ignore that publication entirely. By the way he sends a fragment of the original E. serpylliflia Pers from Mexico, which is a form, I take it, of our western plant, now called by me Eriogon. inaequilatera, and an older and better name — that Cap of Good Hope name I always distrusted, — the E. serpylliflia comes more from our regions. I had hunted in Europe much for the original specimen, till he found it for me now in H. DCandolle.

You may have seen from the papers that Shaw is to pay $100.000 damages to a mean crafty dissolute woman (from New York) of the Burdell-Cunningham kind. It is to be expected that the judge will set aside the verdict of a partly bought partly stupid Jury.

If he must pay, he may be crippled for a few years; but will he tells me go on nevertheless. — Let him first build his Museum then he will unpack his herbarium

~~Gray~~

Lasiologia humilis Rapp is as you say the male Sisyrinchium dichotom. Bentl. & Hook Corr. p. 347 — My copy goes only to pag. 332 — have you any more sheets for me.

Have you seen the plant?

Are you sure it is our Buffalograss. Where is Calanthera dicht. cited?? You say in Hooker and of Geyers Rocky Mts pl. There is it.

Are there any other indications of the grass being Mexican? than Hartweg?

I cite as species Lindheimer Fendler and Drummond and do not know the latters number. (I have sent you years ago both male & female roll of Lindheimer. the first with longer stolons than seen any where else.

How address Kellogg (?) the Californian Botanist?

---

put up library etc and will find it necessary to employ a Curator; Fendler must keep quiet and ready till then.

I shall do with my Herb. as

St Louis Aug 3. 1859

Dear Gray

a few days before I got your last letter I had received notice of the shipment of the paper and paid for the whole of it; so I owe him for my part, and can not make the arrangement with Fendler.

I of course do not come to the Am. Association Meeting, but if you will pay the dues for me to Prof Lovering I shall be much obliged to you and pay it back to Fendler, if you say so.

My practice is increasing and at the same time I have to work out and rewrite Cassiterae for our Journal, so that I have not a moment, leisure, put off correspondence etc. — I find it a more difficult work than I imagined; a good many things must be reexamined etc and the printer has the first pages already in hand. My proofs are printed and the

I got a lot of Rockcress plants of value from Germany;

I should long to be doing something in house botany in his Garden — Asti, Helletti Desvaux etc etc — but do not see that I ever shall have the leisure, or that I can agree with him, though I am on a very good footing with him. I am not practical and don't know to use him.

~~Tom~~ He is building his Museum; but whether he will employ Fendler, when it is done is doubtful. I am a little discouraged about the whole thing.

Yours ever

J Engelmann

If it is anyway inconvenient to send money to Fendler I can advance to him as much as you direct.

plates fairly done, next week I hope to send you extra copies, and ask you to give me a careful and unsparing review of both text and plates, so that I can profit by it. I miss your help and advice in preparing the MS. for the press. But I find it a great stimulus to have the printing devil at my heels!

Of Torrey I hear and see nothing after an entire correspondence last winter or spring.

Leave the Arkansas plants alone for the present. Thank you for the trouble you have had.

Thanks for Brown's Arabis. I have Nees' edition of Brown in German.

I have written to Meehan and have his answer. The flowers of Cer. tuberosum is not terminal. We have had here 4 or 6 flowers last spring, and I could well study them.

Or rarivalis. I see other Cactus flowers — C. cardabilis from the Rio Grande, for example and can examine them, but on the whole my is small at present, and the interest is gone to a great extent. —

Glad that you are going to finish now Epl. Expld. — you will feel relieved when it is off your hands — as I shall as soon as Cactaceae are in type.

Have neglected every thing else — to correspond with Eaton to send Oaks to De Candolle — Grasses to Thurber etc etc.

I have a single plant of Boaffalogues from seeds picked out of specimens; hope to propagate it by stolons.

My and wife's regards to Mrs Gray. — How is Jardin this season?

Shaw is only recovering it can not be called a good yet, not worth while to send him seeds yet.

be published, without expense, or still better, so as to leave him some remuneration.

I saw a long and very good letter of yours to Shaw. S. continues jealous as ever, is making his will now, preparatory of ~~leaving the~~ turning over the whole to trustees. But he is much better yet at the head himself as he not only carries things on more energetically but also with more means than the trustees would have on hand.

I was the other day at the Brown Mountain. Nothing new in Botany. Asters anomalus every where, just beginning to bloom. I was surprised to find on those Asplegny rocks an abundance of Oxalis violacea in flower, entirely leafless, but Scape much shorter than — the spring plant accidi arborum 4–5 inches — diameter. Yarrow rubra to the top of the rocky hills. I have been writing this since a few weeks, but close now, Sept 12th

Your grey G. Engelmann

Sept 1855

Dear Gray

I believe I never thanked you for the fine specimens of ~~Hymenophyllum~~ Trichomanes — and of Nevinsia which you sent me. They have all come in the very best order.

This working at Cacti lames and cripples me for every thing else — I shall be very happy when done, but consider it a duty to finish now at once, though the rainy season is upon us and the leisure hours (afternoon) are not those when I can work best — often tired, dull etc! One or half is in type — the balance however not written!!

Did I write you that I had a visit from A. Wood, who is at work, preparing a new edition; he seems to have a very moderate knowledge of our plants ~~[illegible]~~ did wood wrong!

I write to ask your advice about a name of Cercocarpus.

C. glomerata, sufficiently well described and figured by Choisy was no doubt known to Rafinesque and is, I think his C. parvifolia from "Indiana and Illinois on Vermilion" where it often occurs.

But his description says corolla bi-fida, which I have never seen; squamae nullae, which are always there.

Will it be proper to substitute Rafinesque's name? I suppose not — but what say you?

What do you say to the (new?) regulations that all the collections of the U. S. Expeditions, are to go to the Smithsonian? How about Wright's plants etc?

I learn from my brother that his collections are to go there also. — What are you and Torrey going to do?

My brother has gone to Carson valley and is now on his return, has not got into the Sierra Nevada; his fine collections, he says, have been drowned to great measure in Humboldt river, but he is making new ones.

I have got my Cactae printed in Washington, but learn that Torrey has been disappointed; is it so? It would be a great loss indeed if he had not got them for distribution. My copies are in Washington yet and I must try to have them distributed from thence.

In your Manual you say Acetabulum ~~papillosum~~ hirsuta; lower gland hispid. It ought to be upper gland.

I just get Silliman for September. You have a very flattering notice of my Cactaceae in it — but a little too much so; in future I wish you to be more moderate in your praise if you would consider my feelings. — How could such a Catalogue of North Plants be done? Thurber could I believe like to undertake it; could it

Sept 12 1859

I see that I have not acknowledged your of Aug 8th yet — those eternal Cercentae have kept me from anything else. I had to attend a little to the hybrid Verbenae also, which I have examined very minutely and marked plants to transplant in the Garden in fall.

I have paid $6 to Reedler, but think I owe more to Am. Association.

I do not know why I do not get the Grasses from the binders, shall see to it to morrow. I have sent you two sheets of Cercentae; am still deep in it, without leisure of mind to mature fully the whole thing, but it must be worked out

now.

I have sent all my grasses with Sanders, Gregg's elt to Thurber, but do not think I have any, not contained in your collection.

The Parongchia above mentioned is a queer thing. It comes from Maryland and I have only a small fragment of which I send you part. — The style (if correctly seen) is single, stigma entire, truncate! Can it be Par. hemiarioides, which I do not know? — but it is smoothish; it has the calyx of Anychia, 5 stamens, fruit as long as calyx — something intermediate between Parongchia and Anychia?

But I close now this long deferred epistle. Write soon!

Yours

G.

20 Sept

Dear Gray

I send you the best fruiting sp. I have of Ph. minimum — the loose ones — the others are from Ark & Tex.

The ped. fructifers are spreading and rarely somewhat reflexed.

I have written to you a few days ago, and also sent the Mordeen Grasses.

Whether writing me that Dr Chapman is with you printing a Flora. I should like to give him my notes on Carex, Cact (these however are already printed), Lagitt & Euphorb.

if he will have them.
He has not answered my
last letter, many years
ago, and I do not
know whether and how
I can return the great
favor he did me in com-
municating many most
valuable facts.

Yours Truly

J. Lyell

The Abbot's speech,
you can keep — the
other please return

priate a new and corrected edition of ~~all~~ the Expl. & Survey Reports in (Botany) with the original drawings? It would be more useful than these scattered papers.

I hope you are done with house repairing — we had so much of it on our return last year that I pity every one who suffers by it.

No letter from Chapman.

Shaw is busy getting greenhouse in order before winter. He spends on his house 10 or 20000 dollars! What a found for a library etc.!! — but people think it is doubtful whether he will get clear next time. He continues zealous but unfortunately does not know enough and is in many things a little narrow minded.

Ever yours

J. Engelmann

St Louis Octob 17 1859

My dear Gorton

Your friendly lines with the returning Houston came to hand a day or two ago. Prof Wood has the other day sent me another specimen of this otaychia, Pine Hills, Maryland, Shriver. I enclose a larger fragment.

Stamens always 5
style elongated, bifid at apex
embryo as in otaychei — I do not think it any thing else but the common otaychei — can find no other specif. character — but what a queer thing with this style!

What a pleasant surprise your Maine Sagittaria! It is my S. calycina leaves not developed — probably under water. It must grow all over the U.S. and must have been entirely neglected — I have carefully examined it and find it absolutely

identical.

By the way in Mr Bound. Rep. I find it: "Mermar Massachusetts" which it ought to be "Mermear Missouri!" — but by this mistake discovery it becomes probable that "Mermar Mass" may not be altogether amiss!

In a day or two I shall send you some other sheets of Concordia, and soon the last one.

I have been working at it all summer, under pressure of other business — but suppose I can work better if thus hard pushed. Still, I am sure it would have been more uniform, and more concise if I could have had time. Orthography may be at fault — I find that I say sometimes stigmata and at other places stigmas (which is bad?) — Repetitions do occur — and the whole has the appearance of haste; but I am glad that it is off my hands!

I shall send you an extra copy, as soon as I get it, which please correct freely, wherever and what ever you find to alter, and return to me. I felt the absence of your friendly assistance very much, and wish to have it yet, in that way, so as to profit in future by it. Tell me also about the typography, arrangement. It might have been better, I believe.

Is Chapman still east? What is it, he is printing? a Smithsonian flora or one of Florida, or only a catalogue? I should like to assist him — Those genera that I have worked out before.

I expect my brother in a day or two here — I hope with Collection! There will be then work again, in which I shall largely want your assistance.

Have the printers neglected to print Extras for Torrey's Rep.?? The plates at least are still there, and may not the Smithsonian

+ The use of the (,) at the end of a sentence, type at 7.

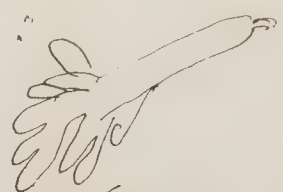
St Louis Nov 2d 1859

My dear Gray

not long ago I sent off an epistle to you. Since that time I have been busy in packing and sending off, and include a list of names, which I beg you to give me the directions of, so that I can send to them, at a time. This takes! It reminded me of the last evening, spent in Cambridge, just 3 years ago!

Shaw as well as I have got books from Leipzig, of course things — Humbert, Hooker, Fischer, Cor etc etc; Walpers etc. among them I find a pamphlet by Klotzsch on genera of Euphorbiaceae in which he tries to characterize

I have not been able to see a live Cuscuta this season (— next year I hope to make better organographic studies —) till a day or two ago I found the „Coryli" in the city limits abundant on Corylus! And near by the Aruncus of Conjiles flourished:



Do you know of a similar occurrence?

I have made a small pamphlet to go with this.

15 genera!

If the sections were well made, I would not object, tho' many of them seem; natural other, are certainly not so, and the character, really too shallow.

He includes your E. Wrightii and E. dilatata with E. cotinoides in one of his genera (or rather a genus of Schlechtendal, Alectoroloxia (where described??) while the former belongs to corollatae the other to amosphyllae, etc. etc.

He does not mention the seeds, stigmas, etc. but relies entirely on the lobes, lands and bracteoles; which he does with E. Sparmannii is not evident.

I hear nothing of Torrey Does Thurber work out his Catalogue? I encouraged him to make the Mississippi his eastern boundary, and not to leave out the European publications.

I am preparing a long Euphorbiaceous letter for Boissier; perhaps it will grow into a paper for your or Silliman's Jour. C, for we here are not going to print again before next session; too poor in money and material!

What of Wright? You see that his Hongkong Euphorbia is quite a curious form (page 519 ~~C. neff~~ C. Japonica var? fissistyla.

Your yours

S. Wright

over

all.

I hope you are both well. My E's kindest regards to Mrs Gray.

I had a long and amiable letter from Braun, he won't say however what now occupies him most, for fear of exciting the expectation to see something published! He is conscious of his ~~fault~~ of delaying! But I ought not breath that word!

Very truly yours,

J. Engelmann.

Pray love to Asa Gray if you see him. How is he? some papers say that he did not find Europe and specially Switzerland, as he expected.

Gray

Euphorbia

Have you any idea what E. mercurialina Mx is? can it be a form of E. corollata, as I have no doubt E. pubentissima Mx is.

Why do we take E. obtusata Pursh to be the smooth seeded plant? Is it not the much more common E. dictyosperma? Does Pursh grow at "Staunton, Virginia"?

Is not E. pilosa Punk = Dallystoni?

I have got from you page 401 & 402 of Chapman's Flora, but 403 is wanting containing nos 14–19, which I should like to get very much; or if you can not send it, send me at least the names of the species described there, 20 & 21 you have sent already.

St Louis Nov 19 '59

Dear Porter

I have just written a long letter to Chapman and hope he will communicate with me. Did he get the Cuscutae in time? I have sent him a copy to Apalachicola. His Euphorbias do not please me quite well, and I can

not make them out fell well — but you have forgotten to send me page 403, which I should like to have. I am now going at Euphorbia with all might, and should like to get the material all together.

My brother has returned with his collections. Many of them drowned in Humboldt river had to be thrown away but a good many are saved, and I think the collection a fine one, though not as rich as I expected it. The Grasses I am selecting for Thurber, and after going through it I shall have to send to you many things.

How is Thurber progressing? I hope he will publish the diagnoses of all new things, not contained in your Manual or in Torrey & Gray or in De Candolle Prod., which three works must be supposed to be in the hands of every American botanist — but how can every one be expected to have the expensive Boundary Report or those other Congressional Reports.

I wish you could have looked through Chapman's MS and helped him bring the work up to the standard required — Still it will be a very valuable addition to our N. A. Flora.

Thanks for your Rubiaceae and other things sent. I shall like to send to Müller Cunnt. How can I do it? just by mail to Melbourne?

You have fixed Houstonia etc nicely — it seems more natural too, than to write

Akron Dec 13 1859

Dear Gray

Both your letters (of Nov 28 and Dec 1) have come to hand — thanks for the $25. I do not know what will become of the Mass of Pl. Lindh. get in my hands, and undistributed. If they only were I would use them for exchanging.

I have used Tenders box to (at last) send off my oaks to DC Candolle. The box will go to morrow to you; I would not have troubled you with them, had not Tenders sent his collections to you so that it goes without giving further trouble

I have included a small package for you; in it the depauperate form of Sagittaria calycina and Forestiera ligustrina. N.B. is not McHaney's Fraxinata from Georgia the same thing! You will find the fruit of ours as long and sharp as any of McHaney's specimens. I have also specimens from Georgia which I can not

I had written already to Chapman and have just got his answer — he says he is almost done printing and gives me to understand that he would not care for any alterations. I requested him to send me specimens of his Euphorbiae, which he does not decline, but says he does not exchange any more!

He says you have specimens of Opuntia per Coms in the Garden. Can I get a print from you next spring? —

Very truly yours

S. Lagelman

among the differences of white & black oaks I find:

1. Hunnea fruit: cal. mast. 5 partit. stamen sub – 8
2. bicom. fruit: cal mast. 2(-3) part. stamen sub – 5.

distinguish from Ligustrum, but in Mx herbar are specimens from Tennessee under the name of Ligustrum, which seem dif. : fruit globose, sessile, with long style fruit unripe.

I have now Woods Euphorbias here; they contain some good specimens from Pennsylvania and from Dr Hale from Louisiana. Among the former I find a broad leaved form of Peranomanthus (?) with alternate leaves! I have not yet examined it carefully, but believe it to be that plant. Can it be Michaux's Mercurialis? — My objection to E. Mercurialis being = Peranomanthus is only founded on the locality — I doubt that Peranomanthus is found in Tennessee where Mx places his Mercurialis.

E. pubentissima may be ipecacuanhae but the capsular pedicels seem to speak against it. I have recommended Boott to examine Richards' Herbarium. I have not seen it as it is packed up somewhere in a provincial town in France.

With your package I send also two small packages for Torrey and for Thurber, which please forward sometime or other — no hurry about it. Thurber contains principally Grasses.

I shall now go at Euphorbiae and then at the plants of any Botanist. When I arrange them I shall lay aside specimens for you. — The collection, it seems to me, might be a great deal richer, but my brother is no botanist nor takes any interest in Botany.

Thanks for your corrections of Cassiaceae.

From one of your corrections I see that you did not understand me at all. The best proof that I wrote unintelligibly page 454 l. 6 I say between both styles etc. It ought to read:

between the styles of the ripe capsule an opening etc.

I was pleased with the short criticism of the note, page 462, by adding to "blame" "justly"!

St Louis 30 Dec 1859

My dear Gray

I hope you and Mrs Gray have begun the New Year cheerfully and with happy prospects. ~~May~~ Our best wishes to you both!

As for me, I do not see much improvement in the next future for my bodily prospects. My professional labors increase; the income they bring me is necessary for me to live on but not large enough yet to make me independent, as to ~~a~~ possibility to connect myself with the Missouri Bot. Garden in a permanent way I do not see any way yet before me, and must bide the time.

Dr Wood has sent me a specimen of his Amnex activiflorus, which is very

most-common plant, found in every ditch.

But he has sent me also — an Euphorbia collected by himself at St Marks, Florida which is certainly new to me, not contained in your or Torrey's Herbarium, nor Chapman's Flora, and which I cannot help thinking must be Michaux' E. mercurialina! But the locality is so different! And the stem leaves are not opposite, those of its branches are opposite or ternate. All are thin, membranaceous veined, glabrous with dimely ciliate margins, as you describe them from the Richard, on short but slender petioles,

with somewhat undulate margin. many slender stems, 8 inches high, from a perennial perpendicular root. Involucres on long peduncles, solitary, with 5 bilobate glands with white margins — allied to E. corollata but very distinct from that. He permitted me to take part of the single specimen he had. — Nothing but a reexamination of the Richard will solve the doubt I suppose. —

I have written about this and other Euphorbias to Chapman; he declines exchanging and does not say whether he will send me fragments of his new species; I hope he will, have written again.

I have been sorry after it was too late to give you trouble with the plants for Le Conte. I ought to have packed Feridles plants with mine (instead of mine with his) and sent them direct. — At all events, you must not have any expense with them — please state what you had to pay, as I hope they are now safely in your hands.

Your truly yours,

J. Engelmann

How are Potter's with you in Cambridge!

from an ordinary Cactus fruit. The
Array of Rhipsalis reminds one
of the Pepo, but the disseptiments
are formed in a different manner.
I suppose this Rhipsalis array
is a very unusual form —

Auth. Bibliographical Question!
Martius presented me with yearning
publications on Cacti. They have
singularly enough no date. Can
you supply that?

Plant nov. fasciculi I. — V.
I suppose that fasc. I was published
1832 ~~and fasc. V is dated~~
and fasc. III. 1837. — fasc. 2 I have
not.

Nor can I fix the date of his
genus Echinopsis, perhaps 1839?
— It can probably not stand.

My brother coll. a very interesting new
cactus, a Mammillaria to all appearance
with inflorescence on the top of the
Mamillae close to the spines —
technically an Echinocactus!

I see your plants of Exped. Exped. quoted,
is any thing already published?

St Louis, Jan 20 1860

Dear Gray

Yours of Jan 8th was
received — as also the Cong
list of names sent by Short,
much obliged for both.

I am not doing much now
in Botany; but finding a few
Cactus flowers the other day in
a hot house I examined them
and was struck especially with
Rhipsalis — of which on the
other side.

Please send the Cucurbitac.
and other things you have for
me by Express.

I forgot who owns the
Richard Herb at present but
was informed in Paris that
it was incorrectible, packed
up — most probably, I think
in Orleans.

I congratulate you on the
rich accessions to your Herbarium

I find no time to work in Botany as I like, except practice! —

It is a singular mistake, that your party is labouring under, that a man or any man could carry the state personally against the supposed interests of the state. It was so with Fremont, whom you thought popular enough to carry the west, because he was a pioneer in western Exploration.

It is the same or worse with Bates. He could not carry a single county probably.

Besides that, he is not the man for any emergency. A good honest man, but no statesman of enlarged mind and views. — He is shewy, prudent, Lawyer, and has managed his case, relying on his own influence (by the way Shaw is going east to hunt up testimony against the morals of that woman! — Even if he proves her a strumpet, would it not have been possible for him to have prevented many of his mismanagement!

Yours Ever G. E.

Gaertner fruct. I, p. 136 t. 28

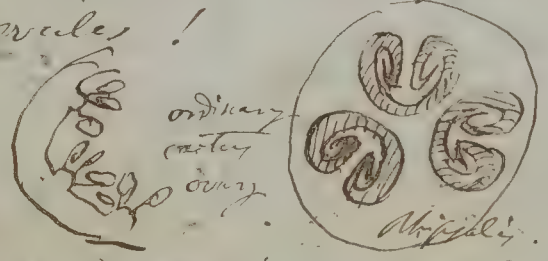
establishes the genus Ahipsalis — I should like to get from you, as I suppose you have the work, a (sketch rough) of his figure and his description of the ovary and fruit.

I have made quite an interesting discovery. Old Gaertner was not quite wrong after all, nor DC. in Prodromus (Decandolle however follows only Gaertner) the ovary of Ahipsalis — of one species at least, which I examined to day — differs from all other Cactaceae, entirely as it will known have an 1-locular fruit with parietal placentae.

Ahipsalis is said by Gaertner to have the ovula attached to the central axis.

Decandolle in his Revue gives a figure of Mopinia which shows a trilocular berry.

Now, the fact seems to be that the ovary has as many cells as there are stigmata — in the flowers before me, 4 or 5 — with parietal placentae forming incomplete divisions of the cells, and reflexed ovules!



Later Botanists 20 and 25 years ago, stated that the fruit of Ahipsalis was not at all different

Repeat are here also against Shaw; never has nothing to say

I am at the immense and very unsatisfactory and often very unscientific work of Cactaceae.

The nomenclature is terrible — but would it now do to alter and amend? Even such men as De Candolle, confounded the confusion. E.g. Hedanon established the genus Harrota, afterwards Gaertner Rhipsalis V; De Candolle adopted Rhipsalis but gave to another genus the name of Harrota. With species the confusion is still worse; later names have been preferred to earlier ones (perhaps from a doubt about the synonymy of the synonymy?) a hundred times specific names have been altered when the plant was managed in another way, without necessity, new names given when old ones were not liked just as Lamarck used to do. Had to clear up the synonymy careful studies of living collections is necessary! it would almost be better to begin the whole study anew as regards the species.

I do not know who has Richard's Hb. but think it is in Orleans.

Send me those things from Hooker as soon as you have enough to make a package or send to the Care of Mr. Hildebrandt from St Louis.

x at the Present Time the Genus Rhipsalis Spring includes Lepismium Pfeiff. Work

Are these the only Cactaceae in Gray H. Chil.?
(Quotation in Walp. Ann. vol I p. 985)

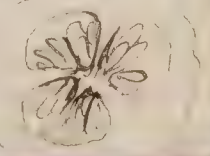
Gay fl. Chil. III. 14 Sch. Sandillon
III. 19 Car Quisco
III. 29 Op. Chalkei

If I recollect right there are many more mentioned — or are these (only the) new ones?

St Louis Febr 7 1860

Dear Gray

I have received your different notes. Thanks for the copy of Gaertner's figure. This Rhipsalis shows how carelessly Cactaceae have been treated by Botanists. It would be a great thing to rearrange the genera, but careful examination of the living flowers would be necessary. I collect as much material towards such a work as possible, but can not do a great deal now. I include a page for Wright. — Of Rhipsalis I need say, however, that I made a mistake. A second examination proves that there is really only one cell of the ovary



with placentae reach to the centre, and the ~~seeds are~~ ovules are recurved — it therefore comes yet nearer a pepo than any former view of it — the placentae are at the interior angle really a little coalesced ⌒ while in Cucumis they are completely distinct there and the branches return ( ) ( ) to meet the walls of the ovary.

Glad that the Box has arrived I hope you found a few things that interest you, in it.

I have never got any thing from Torrey since 6 months, — he wrote me several letters in summer, very kindly giving me information about my Western Grasses — since then I have not heard from him; nor have I got Forestiera.

Did Congress publish the Exp. Exp.? I recollect to have seen the plates with you, but did not know, it was out. — Hoping to be able in an hour or two to get it — the 2d vol of Boundary Report I had to buy ($6.00) could not get a copy otherwise! — Torrey I suppose has not got his extra copies of Bot.

I have written to Chapman for proofs of his new Euphorbia, but can not get an answer, don't want to importune him.

Emission wants a few more Euphorbias from me — what now to send now? Perhaps I shall in June frequently in a letter and it to you to put in Dr Gray's parcel. It is easy to collect some new Euphorbias for soldiers.

Feather finds his business too small here, will make an Exp. Exp. to the West or South for a better business perhaps a little Rock. I have told him of your proposition; he will think of it. I wish Shaw would employ him as Curator etc and give him time to make excursions in Summer, with Overland Mail one could go to Arizona in Sept & return in October easy.

Turpin figured Ulmipelis correctly 1832 — but later one said his diagram was entirely imaginary!!

Your young

J. Engelmann

St Louis April 10 1860

Dear Gray

Thanks for your long letter and thanks for the trouble you have taken in copying Gray's Cacti. — I knew that Gray was very unreliable, nevertheless it must be studied. I see again, how negligent Walpers has been. He copies the descriptions of 3 of Gray's new Cacti and leaves out the fourth. — So he did with my Cacti and with many other things. As Muller, his successor, more accurate

I continue to work on Cacti and had the pleasure to receive the other day seeds of the somewhat obscure Lemaitbergia from Forest; the flower itself is not well described, though figured in Hook. bot. Mag. I do not want to trouble you with copying Gray's Cacti but at some future day you will perhaps have the goodness to lend me both Miquel's Melocacti as Gray's Flora vol III.

By the way, have you sent the panel of plants to Torrey & Thurber?

The most interesting thing I have to communicate to you is that Boissier has examined the original specimen of Michaux Euph. pulcherrima & he considers

that I would give to pray good attention to my pets — Cacti especially but they ought to have ripe fruit also.

When you send to me include if you please the Expl. Exp. Botany. I shall pay the $15 to Scudder for you. Vol 2d same as soon as finished. —

You have to build an addition to your house for Herbarium! I can sympathise with your troubles!

My medical practice is increasing and steals away my time. When I will be able to give it up and live from my income I know not yet. I am glad the Cacti and Cucurbitae are done so far. I am now at least no longer under any obligation to others though it may sometimes be good to be pushed.

I can read your writing well enough, but Boissier's often puzzles me! How is it with mine to you?

Ever truly yours

G Engelmann

St Louis April 17

in Hb. Richard, and that he takes both for forms of E. corollata. I copy or translate all he has to say about Euphorbia in Hb. Richard, and you may send the sheet to Torrey if you think it interests him.

Boissier thinks that Nuttall's Acanthus or rather the Texan plant sent by Lindheimer Drummond and Berlandier is distinct from petaloidea, and he names it E. zygophylloides.

You know that Shaw has gained his suit. It cost him as he says from 15-18000 dollars! — What books etc could have been bought for that! — He is tough as any rotchman and I fear for the present he will not buy any more books; but as to Fendler, I shall have to speak to him as the season is advancing. I am afraid that it will be no go! As I suggested to him the other day to devote annually £1000 for increase of library and half as much for Herbarium, he laughed at such a preposterous idea — his museum, he said, cost him (building and arrangements) 25000 and he had nothing yet to fill it, etc. —

I am afraid we can not pull well together — I can not influence him. I do not understand this soft soaping & the written phrase is, — a man who has no real scientific zeal nor knowledge who must be got to do things by diplomacy, I can not do much with. The proper way would be to get him interested in what interests us and seems important to us, but that I unfortunately do not understand.

Fendler is undecided what to do.

Have you heard any thing of your Mss of Forstein? It is now again in flower, or rather past & made some interesting drawings.

I have sent by a gentleman going to Europe specimens of Euphorbia to Boissier — so you do not wait for me, but send on.

I am going now at my brothers plants and send you a set of them with the request to help me naming them.

Do what you please with the Cact.

The only copies of Boundary Cact I sent to England were for Hooker father and his son.

If you write to Wright tell him

St Louis May 5 1860

My dear Doctor

thanks for the big package just received. Those unfortunate Afghan Cucumber were badly packed and are ground to powder — probably before they reached you — loose in a very few sheets of thin paper. The other (Houghton) Cucumber came perfectly safe and sound; as well as weighty things; thanks for them. What is to pay? Shall I pay to Freedom?

The living Cactus shall be attended to. Wright should look out for seeds also — the first is important to me. I vainly look for his notes which he used to make so full and so carefully. —

I am now at my brothers plants and shall pick out a set for you soon. At present I can do nothing but write letters

cance: house cleaning — you know what that is!

I write principally on account of those plants for De Candolle and Boissier. Have you not sent them yet? They are anxious to get them before the work is finished. Boissier especially will commence to print a monoecion so soon, that I have given up my idea of publishing something like my Conspectus on Euphorbias of U S & Mexico.

I was pleased to find that he confirms now fully my notions about Klotzsch and his genera & species, after having examined the Berlin Herbarium; he would not fully believe me before!

He writes to send to the care of Charles Vignier, Commissionaire au Havre and that then he will get them safely and quickly.

He had got from you the sheets about Euphorbia of the Boundary Botany, as also specimens of Chapman's new species (from you?)

The other day I got by mail but without post office stamp! a small box containing some Cyperaceae, probably Oncnia! Des Cosi and from Chapman but without a single line of writing!!! to Geneva

Send at once, if you have not yet done so.

Question what effect the political events will have on Boissier & De Candolle's labors. B. writes that for the present he has to stay at Geneva; and can not yet go to Paris & London as intended.

Ever yours

J Engelm

Dr Cooper left here yesterday when is Thurber, I have not received an answer on several letters. Was Torrey seriously sick, or Dr Cooper tells me.

St Louis May 11 1861

Dear Gary

to the avalanche of letters you get for the last 6 month a proper calm has succeeded and I suppose, busy as you are, you are not displeased with the quiescent state of affairs. The fact is that I am paying for that January paper now and am working up the arrears accumulated in 9 months — just the time of pregnancy, — as hard as I can. It had been for after all, I write too hastily and therefore too verbose, and often, I am sorry, too vague and but you will soon judge. At all events you will find it a very long tailed thing. Journey long & sisters! — You will be satisfied with the contractions I have made in my writing and [illegible]

come together, also fraternus and debilis under pallescens, and your acuminata and paradoxus under Canadensis, perhaps some of my new ones ought to have the same fate if we had more specimens to compare.

Collins had been a little addled at a double I expressed to you and which you communicated to him. He will get J. militaris.

J. Gracilis, Nabiscus & Gracilis ought to get from your region. Who will get them out for me?

I see my printer has made me say root stalk for rootstock; too bad, that I overlooked it.

I shall send you, when it is printed very soon, and you can criticize.

The question about J. Setaceus is not urgent — as it is already printed.

I begin to doubt more about J. pedoratus — brown or black fruit & and from "Massachusetts." It may, after all be your Camporaspes; but there is no doubt, that Thayer Herb has it Conradi under that name, and also that La Harpe's description of pedoratus leaves no doubt; nor Kunth's.

I have a good long letter from Braun; he had been sick long but was better. He was working again at Isoetes. Among other questions he asks:

Who is Mann, of whom Durieu says that he has collected his "Isoetes Braunii" [J. echinospora] at Mount Mansfield, Vermont (a mountain lake?) and near Concord Mass. Are the localities correct? [Is that your assistant Mann?]

Can specimens be had of "Isoet. Muricata" from Woburn, Mass.

"near Darby, Dr Hunt."

Who is Dr Hunt, and where is Darby?

I believe that is all for this day.

Good bye

yours truly

J. Engelmann

St Louis May 18 1860

Dear Gray

Thanks for your long letter of May 1st partly answering my questions. Thanks to Wright for the interesting Cuba and his short note, I shall write to him soon; he used to give such full notes about plants — but nothing this time!

Here seeds coll. by my brother in Utah — many of them apparently worth nothing.

Fendler is doing very little here, and not going away — getting older? loosing energy?

Thanks for the Forsteria and other papers.

Ribes Missouriense is a good species I think, and common here. I should like to have at least fragments of flowers of the allied species. I hope put up specimens for you and others.

Has Mettenius got a full set of Dr. Wright's ferns?

Shall pay Fendler as soon as I have money which is just now very scarce and very difficult to collect.

Yours very truly

J. Engelmann

please send enclosed package for Kew — though I think Hooker does not care much for them.

also of Ellisia ambigua, which is no doubt our plant, and is well though slightly distinguished from E. Nyctelea. — I have no native specimen of the latter. Can you let me have seeds of it? I shall try to get seeds of E. ambigua for you.

I have reexamined the allied plants, and have come to some interesting (though preliminary) results.

The scales (not folds) of the corolla are latent appendages of the filaments, and correspond with those of Cuscuta!!

Ellisia Nyctelea and ambigua have 10 scales (or rather 5 bifid ones!) not 5.

E. microcalyx and E. rotundifolia have none at all.

E. microcalyx has an appendiculate calyx — E. rotund. not.

The aestivation of lobes of corolla is variable in our Ellisia amb.

and the append. of calyx are certainly of no generic importance (Hydrophyllum, Lobelia) so that it seems the genera of Hydrophyllaceae have to be reconstructed.

Moreover, and to me the most important

Cuscuta belongs here more than to Convolv.

is intermediate between both families

has placentation partly like Hydrophyllaceae, also irregular aestivation & scales of corolla, which are wanting or present in different otherwise allied species.

with Convolv. is has the twining growth and the pleurobrolan capsule in common, and the spreading over the whole globe

an intermediate link?

Here you have some crude notions, just — some cap in my brain. Tell me what you think about it.

St Louis June 12 1860

My dear Gray,

This is the first day of occupation leisure after a campaign of 4 weeks, a more busy time with practice of medicine than I have had since my return from Europe.

I send you a few memoranda made long since for you.

All my botanical exertions are now devoted to the minute examination of such Cacti as I can lay hands on, with the hope of discovering the true limits of the genera. Opuntia is an excellent genus, distinguished even by the peculiar polygonal pollen and the arilled ovula. —

I ought to examine now the plants of my brother, or rather ought to have done it, but I do not find leisure enough for it. —

My letters of May 5th & 18th must be in your hands.

Fendler has been paid as you know. He is vegetating here not doing much, apparently

without much enterprise.

Shaw is working ahead but I do not see much of him. We are very good friends, but an afraid would not hitch well together. Scientific Botany is secondary or tertiary with him, while I can not get up an enthusiasm for what interests him most.

Where is Thurber? If you can, tell me his direction at once! I understood he was somewhere in Michigan.

How is Mrs Gray? I suppose she has returned before this, and has been benefited by her trip. My wife joins me in sending our best regards

Ever yours

S Engelmann

add to your flora:

Ribes missouriense Nutt. common in southwest Illinois (and Missouri) and

Elisia ambigua near St Louis and on the Illinois side occasionally a weed in gardens

p. 459 Stigm. 3 alternate with the cells can not be correct. I find it the reverse; but they are alternate with the stamens in Sisyrinchium opposite the stamens in Iris.

Iris

Sisyrinchium — Endlicher puts it correctly.

I have examined our white form which flowers 2-3 weeks earlier than the other but can find no good character. It grows in drier soil

var. albiflorum, scapo aphyllo strictiore, ~~ovariis~~ pedicellis pubescentibus, sepalis perigonii albis profunde emarginatis aristate-cuspidatis, apice flavescentibus, sequentibus perigonii

The only Iris growing here seems to be I. virginica but has sides of ovary deeply channeled. Can it be Iris missouriensis? I do not know a description of that species. It is common over in Illinois and fully belongs to your flora

I suppose the strict leafless scapes are sufficient to distinguish the white Sisyrinchium as a distinct species; the blue one has ~~close~~ petaloid stems which have also a circumscribed growth at base of segments of corolla.

St Louis July 12 1860

My dear Gray

Enclosed you will find the Catalogue of Venezuela Leguminosæ which Short has sent me.

Also a letter for Wright

With Boissier I correspond a good deal and I think he will get the Euphorbias right, a great great deal better than Klotzsch. Klotz is a confusionist, and sadly unreliable.

I enclose a few seeds of Ellisia ambigua, all I could find, the plant which a few weeks before had made large bushes had almost entirely disappeared.

I have no news from Boissier and De Candolle yet about those plants.

I have just had the first letter from Thurber, he is sadly out of sorts, no time to work, no money to live, no room to put out his things, no hope of a better future.

Dr Grenland in Paris a friend of Caspary's Jay's Illustrations (and mine) asks me for seeds or living plants of any American Saxifrages. I know you have one or the other in the garden. Can you send in some way or other

for his description I think it probable he has also got S. falcata (= S. Caniflorii Lin) — new to your flora. —

Shaw is progressing slowly.

How is your garden this season, have any of my Crotham seeds come up? I have only grown the few Carter seeds picked out of the specimens, which do well.

How is Asgassiz, and family.

I got a line from Mr Longfellow recommending exchange with a Mr Keck in Austria. Do you know anything about him?

Politics are in a fine mess. We are here for Douglas and hope he will if not now come out as triumphantly in 1864 as Jackson did in 1828. — Do Politics run as high with you as they did 4 years ago ——?

Our respects to Mrs Gray! Lapham was here the other day.

Ever faithfully yours

G Engelmann

seeds or living plants in the fall to Paris.

You know that Vilmorin is dead. My wife had a very touching letter from Mad. Vilmorin.

Some new Cactí, not yet in Cultivation are germinating with me, especially the various Opuntia tesselata, from seeds, 5 or 6 years old.

I have examined again living Ellisia; the scales are exactly like Cuscuta; but Hydrophyllum is so much different as almost to shake the idea of lateral appendages to the filament. — found the acceleration again visible, but mostly convolute in Ellisia aulicyna.

Wright's Cereus grows from the cutting sent by you and from seeds! but his Melocactus wont germinate.

I do not hear from Anderson.

By the way what is the remarkable willow included here?

You will breath a little more freely now, as Vacation has commenced!

I have Anchloë growing! mostly female plants, now in flower; in place of males my brother brought. Bartlett Oligostachya, now also in full bloom but one or two male plants are among the number.

You will want specimens of both grasses.

That Marsilea of Mr Allen is curious. It may be different from M. quadrifolia. He has sent me a fragment.

I have reviewed all my Marsileas and come to doubt the difference of vestita, uncinata & macrocarpa. I think they are all the same. Wright's No. 2111 is probably correctly named M. macropoda, but then, the stipe in my specimen is simple and scarcely united to the petiole, while in the single fruiting specimen of Lindheimer 4 fruits are united together and with the petiole. More specimens are wanted of either.

Mr. Tatnall sends me today the same Sagittaria calycina which you sent from Maine last year. It might be called var. spongiosa

St Louis Aug 1 1883

Dear Gray

I wrote to you the other day returning Buckham's almost illegible MS of Leguminosae, but forgot entirely to thank you for Chapman's flora, which I do now. It is as you said before a very great and valuable addition to a flora of the U.S. but it might be still more valuable!

I see that he has come to the same conclusion, that I had adopted about Sag. latifolia pusilla. But Mr Tatwall, who seems to be a wonderfully zealous fellow if put on the right track, has now found pusilla (as well as calycina) in his neighborhood and sends me numerous specimens which I think make it possible to keep pusilla and latissima distinct — unless in localities where both grow, intermediate forms are found. S. latissima does not seem to grow so far

in the shade. But health good practice of medicine even skin!! I shall now go down my Brother's plants. —

How are you and Mrs Gray? Will you take a trip in the vacation? You should extend it and come — what say you?

How is Agassiz and his family? I have not heard a word from them for a long time. My wife wants to know whether they keep school yet, and whether none of the daughters is married yet.

Well, you had Douglas right in your midst! — His popularity as high with you as 4 years ago? — We will be glad when our election (next Monday) is over, for the noise and excitement, even down to the cow and sleigh bells for Bell, transparencies torches music, fire works etc, speaking meeting and huzzahs become stale and tiresome, but even will give Missouri to Douglas,

Ever truly yours G. Engelmann.

Remember me kindly to your mother, & look that Lindenberg for Dr Wislizenus,

north. What I took for S. natans without flowers from Southern Illinois, can not be it — from the venation of the leaves. But what it is, I do not know.

I write principally on account of Boissier and the box sent through you to Geneva. In a letter which I received today he announces the arrival of the Quercus at De Candolle, but says, notwithstanding every exertion and careful search the package of Euphorbia has not been discovered.

Now I am under the impression that it was a thin parcel, say ½ inch thick, which I packed in one of the Pasteboards containing Quercus. But I may be mistaken it is better than 8 months that I packed it, and such things escape my memory. I recollect that there were a few other small parcels, one for you, one I believe for Thurber etc. Could it have been mislaid among them — or have you any recollection of having seen such a parcel? It was directed to Boissier. The more I think of it, the more I become convinced that it was included in one of the big packages for De Candolle and how it can be missing, is a mystery to me.

I have done nothing serious in Botany lately. A careful examination of Euph corollata shows that it occurs often, as Mitchell has stated sub masculin but never, I believe female. The styles are peculiar, stigmas compressed, a stigmatose undulate margin bounding the shell styles. I had seen something like it in C Spencer & C Wright's and similar ones, also the want of Caruncula of seed so that they must be separated from the Mitchellae, and form a section by themselves.

I had a delightful letter from Thurber, she has no room, no leisure and no pay, he says!

I learn that Klotzsch has published his Thiorrae and in Boissier says very laughingly, Boissier also is inclined to separate species too much, I am afraid.

We had here on the 21st the hottest day I ever experienced, 104–107°

St Louis Octo 4 1860

My dear Gray

I am as bad a correspondent as you are, or worse, but I can assure you that Politics do not set me crazy, as our neighbors over the river appear to be. Two presidential Candidates for their sucken state seems to be too much for their equanimity, — Well — Nonintervention is after all the only true doctrine and you will have to come to it, all of you, by and by, if not now, at least in 4 or six 8 years or some time or other! Cheer, fair sativ est!

I have a letter from Buchinger who says that the package of Cephalocion is not forthcoming. I think it must have been mislaid in De Candolle's Herbarium, I see the ill effect of my procrastination

full of starch, shorter thicker, in appearance much like a white sweet potatoe, only smoother of similar pleasant taste!

There is some curious working of the developing buds in twisting, perforating bracts and appearing on their back etc.

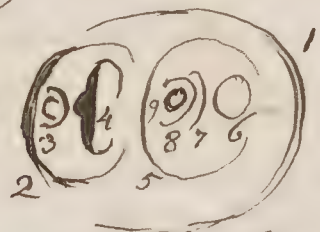
This has kept me from Simpsons plants, but now I must work at them in great hurry and have to call on for help!

I think that Shaw will now give Fendler a berth, he has almost finished his Museum and will open his Herbarium (Bernhardi, bought by me 3 years ago in Leipzig; Fendler is to put everything in order. If once he has got a position there I hope

in not publishing discoveries.
I had described and figured some
30 or 40 new Euphorbias while in
Europe. Boissier tells me now
he has published most of them
without knowing anything of me
only a few will appear under
my name. —

I have been very busy with
the curious Nelumbium, which
kept me 6 weeks at least
drawing and describing, and
mounting up in oil now almost
dry lakes and swamps. Its
growth is remarkably simple
uniform and curious withal,
but rather difficult to make out.
There are 5 bracts and 1 leaf
to each node, (one above or
opposite the other) 1/1 or 1/2 arrangement
a fl. or bud (always there, but
often undeveloped — only think of a
Nelumbium flower 1/4 of a line in
diameter or less! I have exam-
ined about 1 line in diameter with
all the organs present, of course

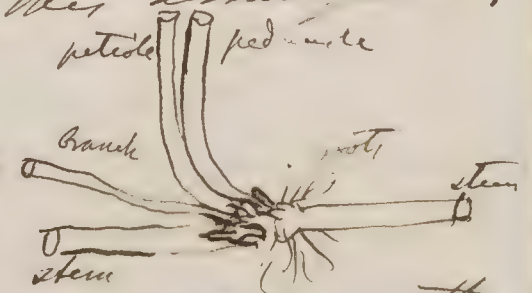
the genital ones in a rudimentary
state) on a branch. —



The order is the following:

1, enveloping bract
2. floriferous bract, enveloping also leaf
3 flowerbud, its 2 external sepals always visible.
4 leaf turning its back to flower
5 floriferous bract (or stipule?)
6 continuation of stem
7 lower basal bract of branch
8 second basal " " "
9 branch

The examination of 100 and more buds and stems shows invariably this arrangement.



The tubers seem to form in the
gall and are the stems

2/ Shaw will find his services useful in many ways;

Do you know any thing about Lindleys collection of drawings and other apparatus for teaching now offered for sale? Shaw has a notion to write enquiring about it, what it consists of, price etc.

That Marsilea seems to be quadrifolia after all.

I have live specimens from Philadelphia and find other characters in the bulb etc. James sent it to me.

Thanks for the full information you give me about the Sisyrinchium family. By the way, do you ever hear of Martius? the has not answered — letters written 18 months ago. But Fenzl wrote me lately, — more about the unfortunate expedition in Austria than Botany!

— Klotzsch must have made a bungling thing of his Euphorbia as Boissier writes. I expect his publication from Brown.

The Euphorbia for Boissier were in one of those "2 parcels" you mention, and must be at De Candolle's.

Pindler is anxious to hear something about the disposal of his Venezuela plants.

Thanks for Lizioln.

I have again collected a few specimens of Sagittaria calycina; ours is much larger flowered than the eastern form and has more stamens but all the forms are sub-hermaphrodite.

Would you like seeds or tubers of Nelumbium?

I shall also send you the Buffalograss etc.

Did anything come from my brothers' seeds?

Ever truly yours,

J. Lagenheim

say against it; but if Disunion is to follow, we all will mourn the day when Lincoln has been chosen. Such elections I suppose New York will scarcely prevent. I can well remember the time, when under Harrison the corruption, so much Declaimed about, become worse than before, well — no quarrelling about those things.

Our kindest regards to Agassiz and family and the best wishes for the young couples!

I shall get Relumbrios Fichens for you. — How can Trecul say that stipules only are developed — they are bracts, why call them stipules ?? —

The tops of your Brother must have been very hard for you. Was it the one I saw in New York at Lowe's ? — What do you call "fever" ? Typhoid ?

Ever yours

J. Engelmann

I have a specimen of our native Coryd. (debilis) from Philadelphia. Does it occur further east? Do you want printed labels for the former lots of my Brother, such as the enclosed specimen ? How many ?

St Louis Octob 26 1860

My dear Gray,

Thanks for both your letters. Heinrich is now engaged at Sheffield and they seem both pleased. I shall pay F. $50 in a few days.

The letter you enclose of Wright says that he does not know anything about a Cereus which you have sent me together with other plants of his last spring. You will recollect a long thin triangular Cereus, living and its flower in Brandy. I have the plant growing from one of the joints and the seeds have germinated. Wright says he never collected it. Where then did it come from ??

Thanks for those Mexican seeds — they are few and were unfortunately stamped by the Post mark.

I have begun my Brothers plants in good earnest and have at once stumbled on a good many points. It would take me 6 months to get through with them, and shall deliver that report in 4 weeks !! I can not go hastily over those things

and find that I often have to exaggerate all the allied species minutely, make a revision of the whole alliance. Thus, I have today worked at Corydalis, and can not help separating American in at least 3 perhaps 4 species, that is, if the characters relied on in other genera are characteristic here also; proportion of flower parts, etc length of spur, direction etc.

If your plant, figured in Genera is the true C. aurea (I have specimen from Oakes himself) our plant of which I must have sent you specimen common in the whole Mississippi valley is a new species, with very short curved spur. Corydalis etc perhaps all the western (montana etc) belong to aurea proper, but we have a fourth which I have sent out as C. micrantha — I shall to morrow reexamine the whole batch.

Can you send me a flower or still better a grain of ~~seed~~ fruit of A. glebenicum to compare

also a seed of Oakes' Coryd. aurea

A flower of Delphinium exaltatum

The same are allied species which I call provisionally D. bracteosum comes from Utah. The Delphinia are running and difficult. I have spent a week in reexamining their flowers. I believe I must distinguish 2 other species, one D. striatum n. sp. seems somewhat allied to Nuttall's D. bicolor, but if Nuttall's descr in your Flora is correct, the lower petals differ widely.

An Aquilegia perfectly white, near leptocera, but with wider flowers shorter spurs and large membranaceous leaves, seems new, it can not be Hooker's macrantha?

Anemone hispida I think can be kept distinct, though Torrey unites it with mexicana. It seems always perennial.

Eschscholtzia hyperoides — flowers only 2 lines diameter, with 6 or 7 stamens.

That is the extent of my doings!!

I am glad to learn that Grisebach has named Wright's plants. You say you will publish the new ones and a Catalogue of the whole I suppose.

I shall do as you ask about the Journal of Proceedings and take Lowell's set and continue a subscriber. — So, send on.

They ask £ 200 for Lindley's collection, and Shaw has declined.

If the competition at Leadington can be put down by a Rep. Government, I shall not have much to

the pulp in some Cactaceae is made up of the enlarged and recurled funiculi. But in Opuntia the young seed becomes covered with filaments which gradually swell up, their cells are filled with mucilage; finally when the fruit ripens the mucilage turns into sugar usually the saccharine liquid is high coloured and the cells are detached forming a shapeless pulp in which the seeds are "nidulantia". Strictly lately that I observed this, but will follow it up next season with better opportunities. — How is the pulp of Ribes? — I shall also examine next year.

Gaertner fruit III. p. 265. t. 158 fruit of Opuntia. — Is there any thing about this?

Osservazioni intorno alla struttura del frutto dell Opuntia par J. Gasparini in Academia delle Scienze di Napoli (1853) tab 2. Can you tell me whether it contains any thing like this?

Shew is going on slowly, but still going on. He has the ornament as much at heart as the scientific which I think is very well to popularize his establishment. Times unfortunately do not permit him to spend any money on herbarium.

Please send the enclosed to Wright when you write

Athens Nov 1 1861

My dear Gray

Is it possible that I have not written for 4 months? Meantime I got yours of Aug 6th and got the Mexican Cuscuses, and now already your list of Parry's Compositae which came today. I forward it to Short at once. Thanks for all that. You will ask, what I have done in botany all that time. Not much — business engrossed with Cactaceae, of which below, continued to dabble with mildews etc — worked at arranging my collection — but did not much serious work.

Then came Parry's nice collection. I studied some of his plants —

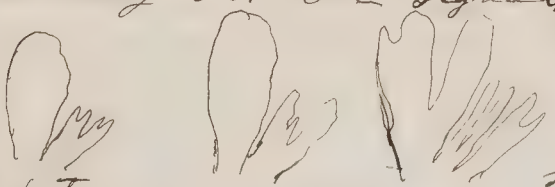
Is not 83 a new Frolliera albus or albiflorus? The white & blue Aconite seem different. — Vesicaria or rather Physaria seems an intricate genus. Last spring I examined several of my brother's and found the number of ovules and also form of style varying, and am not satisfied about the limits of species, and whether there are only one or 3 or 4.

135 is a nice Gentiana which got lost

among Caryophylleae. It belongs to the group of prostrate, but seems well distinguished from all of them; and on account of the different length of the stigma & pistil, pistil included or exserted, I have named it G. heterocarpa. The other Gentian, 306 is closely allied to G. prostrata, but seems distinct by the 4 parts flower and the acute base of fruit — etc. Have you rocky Mt. specimens of prostrata to compare? I have only been able to compare the Altai plant, which seems quite different. — It might be named G. Parryi. — I propose to study the Gentianeae if you have not done so yet — but please send me a specimen or two of 309 which Parry says you got a number of — he did not send me any.

273 is Cerastium cuspidatum.

254 is I suppose Synthyris plantaginea then the small one 255 must be a new species. It is distinguished by its larger blue ~~petals~~ corolla (~~corolla various~~ and variously divided in segments) shorter obtuse oblong spike, smaller and more woolly only, smaller anthers,



S. plantag. S. alpina

also by the shape and venation of the leaves, — it ought to bear the name of S. alpina, as it is growing on the highest peaks, the other low down in valleys —

We are anxious to hear your report on the nice Pedicularis species — and Castilleja etc. etc.

No. 232 must be a new Pyrola (at least not in DC. Prod) near elliptica, which might bear the name of P. purpurea, etc.

Parry ought to have made his specimens more complete, with root etc, and a little more full.

234 Gentiana Myrsinites is very pretty; so are the Saxifragaceae.

Ranunculaceae are also some very nice. I expect that Prof Torrey will attend to them.

I have written to Torrey about the Pines. Pines. It is what all along has been taken for P. flexilis, but the original description of James (erect cones, etc) militates against this. I suppose that Newberry's P. contorta is the same, high alpine form, shorter cones etc; but P. contorta Jour. P. Clavaeana Schiede and P. osteospermum Wol. Rep. are identical and must bear the first name. P. Clavaeana Torr Bot Bnd would be a distinct species (P. Parryi).

Pin. B seems to be the same that has been found by Fremont and Jessup without cones and is a very distinct species: P. aristata, but I will hear what Torrey has to say about them.

considered great loose their eminent position and fair fame. Fremont the presidential candidate, who was to give the country a pure and honest administration? He is a (willing or ignorant?) tool in the hands of speculators and swindlers and humbugs. Lincoln, whose honesty was to bring back pristine happiness, is he any better off? Is not the government machinery in a worse state than ever? I see that some office seeker had to be rewarded with the Consulate at Leipsic, which the Hügels father and son had had through several administrations to their credit and the benefit of the country. The Smithsonian will sadly feel the change. And such miserable political traders as have been appointed here! Nobody to reward, nobody to punish! oh what fine phrases! No, I think the government is gone, and the rivalry of two great republics we must hope, will act as a reciprocal check. But I intended to say nothing about politics and now have got into the mire again.

Mine reminds me of Nelumbium! Water too high to get root — will try though.

Ever truly yours
G. Engelm

or library, which is unfortunate, but we must take what he is willing to do and to give. He has erected in a grove a very pretty though plain cenotaph for Nuttall. I wanted him to put his bust up — but he declined. Is there one, or a portrait in existence? By & by he will get Hooker's & R. Brown's busts.

Many thanks for the numbers of Linn. Soc. and many for for the specimen of Callicarpa! It looked so much like Lamope! But can it not have been introduced with hay or grass seed?

May thing new from Grisebach, about Wright's Cuban plants.

I believe I never mentioned that last spring I found on the same spot several forms of Draba Aizoon grown

1. grandiflora, on northern slopes
2. apetala, on southern slopes
3. parviflora, on intermediate places

I have got Astragalus calycosus from the Sierra or elsewhere in Utah. Included you get specimens. All are fertile; apetala has sometimes abortive filaments petals, stamens

also abortive. I shall watch it next spring — it seems that only the coolness or rather exposure makes the difference; fast growing plants, exposed to the full heat of the sun are spitted, more shaded ones have fully developed flowers. See what you can do with the seeds.

All these investigations about Opuntia fruit etc etc and others ought to have been published in our Transactions but the war makes it impossible to go on with them. No means!!

I am sorry to see Fremont here. He is out of place, as much as he would have been as President. He has an ambitious wife and a domineering one. He will not increase his reputation, though he is very popular especially with the foreign born population. He was not Blair the same 6 months ago, and how has he fallen! Fremont's outward show, showy body guard, sentries & sentry-boxes — guard-houses & barracks around his headquarters, one of the best houses in town, his impressibility to etc. show the silly imitation of French ways, which he may have admired in Paris. I have not tried to penetrate through his body guard to see him, though I used to like him, when he was a simple Lieutenant or Captain and intent on distinguishing himself in perilous explorations.

His present Campaign reminds me too much of his last expedition to the Cochatoopee Pass 8 years ago and I should not be astonished if he did imitate there the fate of Bourgoyne at Saratoga. Still the vacillating course of the Government in his regard is shameful and irritating.

Some weeks ago I saw a very good account of our affairs in a London paper. It admitted that 4/5 of the population are secessionists and let me tell you that they have been made so by the insane course of Lincoln, Egan, Fremont and the whole of them. Their friends quarrel now, when has made most secessionists! It is certain that 9 months ago there were not 1/5, not 1/10 of the population!

See how quick reputations wear out now days — how quick men

M. Pitch has given a colonel organizing about the Cochinillas of Texas in Mexico (no time to read) in Southern Indiana

I must not overlook a phase in your last letter: Poverty in Albany will be a worthy theme for a c. of mind. Three more & two! Good! but no wafer me if I come again I can have no use for the sticks — 15 or 20 years hence! Poor life!

St Louis Nov 14 1860

My dear Gray

Thanks for your kind information and your offers of parts of your herbarium for study.

The Corydalis I had from Oakes himself, and it is the same as all the western specimens, Upper Missouri, N. Mexico, Utah and Texas; but I distinguish C. flavula Philadelphia and all the Mississippi valley, what I called debilis C. micrantha (which I must have sent you formerly — It is very long that I distinguish it) — it may be a micranthous form of aurea (not flavula) which we have not! — Missouri & Nebraska

C. crystallina

Your delph exaltatum is no doubt different from my Utah plant.

But I can not finish this work at all. I have not the way to go heedily over it, and a thorough study will take a year!! Perhaps I shall ~~try to~~ pack up next summer and come to Cambridge & N York to compare the doubtful things, after studying them here.

Meanwhile I shall continue to

victory. — If your bright anticipations are realized I shall be a convert to your side at once; but it looks more as if your party would fall to pieces before ever in power; and the Union itself is certainly jeopardized. The northern slave states will be the worst off.

Don't let me trouble you with these botanical questions. If you have a moment, you just let the letter lay.

Yours ever

J. Engelmann

I inclose a word Corrigan.

I am preparing a long and last letter to Boissier before he posts. He is going to split up Euph. hypericifolia, but says Nutt & Gray make a miserable botch of the genus. — That package not yet found.

Here Richard now belongs to
Mr A. de Tronqueville
5 Rue Palatine
Paris
She is very obliging, Boissier says.

trouble you now and then.

I fell on Linosyris (Chrysothamnus) I can not get along with the "species". The greater or smaller division of the corolla seems to be no character.

L. viridiflora named by you among Hayden's Yellowstone plants, which perfectly agrees with Hooker's description seems to me a smooth form of gravcolens. This with smooth leaves I have not seen, all my specimens belong to var. β. But here my brother sends a perfectly glabrous form, which evidently carries gravcolens & viridiflora. I enclose a branch.

But Torrey's L. semulata seems to me a good species, but most probably identical with Nuttall's Chrysothamnus pumilus (low growth often pubescent branches); it ought to be named L. pumila. — heads smaller, more corymbose, flowers less exserted, pappus rather longer — leaves short, scabrous above, ciliate — semulate, rigid. — You have it from my brother, old collection, named by you L. viridiflora and he sends it again in different form.

Hayden says that his L. viridiflora is (not pumila but) 4–6 feet high, covering the bottoms of the Yellowstone, while the tomentosa one grows on the gravelly hills.

Can you spare me one head or two of L. Bigelovii? L. spathulata I have among Wright's. — L. albicaulis I also have, never saw

I do not recollect that you ever mentioned that Cevens of Dr Hayes but never mind, I shall write to Thurber about it.

Enclosed you will find three labels.

Delphinium may remain for some other time.

We do not have Hooker Bot Mag here, so that I can not compare. Tell me, if not too much trouble, whether in his plant the leaves are the pitcher like (as in Sarracenia) or large, membranous, lobes with cuneate base, like my plant.

Cruciferae trouble me a good deal especially because most specimens are collected in early spring without any fruit — some curious things among them. The enclosed is very close to Lepidium — 2 seeded cotyledons incumbent — but habit very different and yellow flowered.

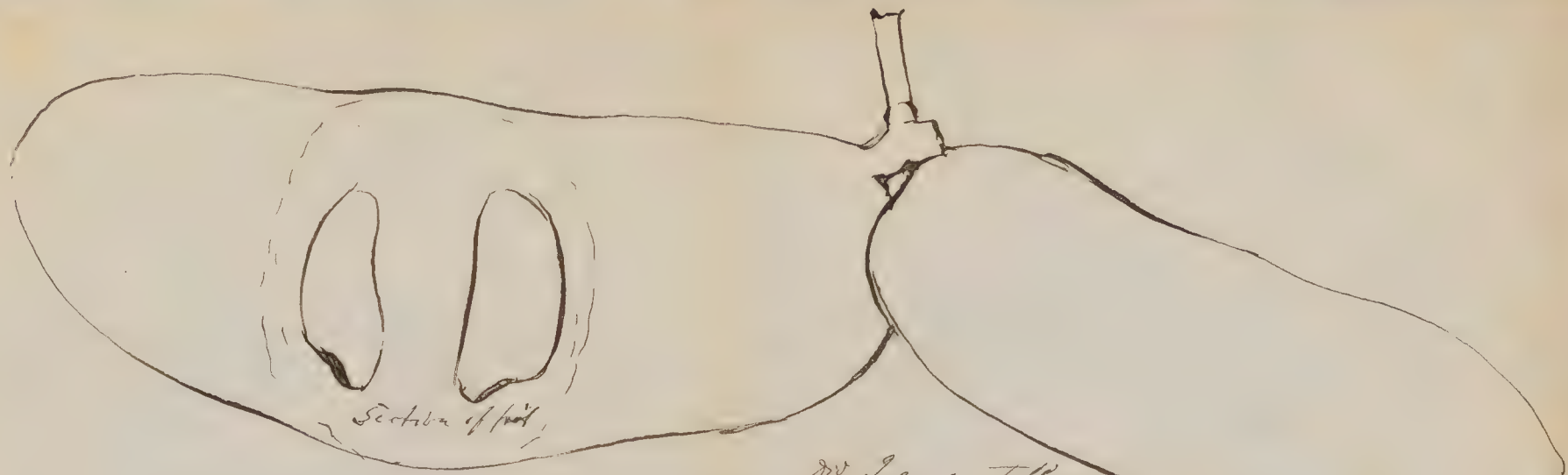
A plant looks exactly like Stanleya viridiflora (I think) but Liliger or with pistils not stipitate but sessile. Several sp. of Streptanthus, etc. —

As to politics — you have gained the day — but it seems a barren

St Louis Nov 21 1860

Dear Gray

you see, when I study plants, especially western ones, I pester you with letters! I shall not be able to finish my report in the time required. – I still labor at Euphorbia; believe have Strophanthus asperatus and verrucosus; and several other (new?) Strophanthus; Stanleya heteropteella ?? another plant, which might be Stan. viridiflora, but has scarcely stiped ovary and spatulate petal; it is a stipeless ~~Strophanthus~~ Stanleya, dense long spike etc. – Cleome serrata is also here – Have you ever seen Cl. lutea



Your Delphinium exaltatum is quite different from my plant. — I shall not work at Delphinia now, but some other time perhaps, and then I shall ask you for your material.

I have not yet had occasion to get that Helianthemum for you, but shall do so soon.

Are Cleome lutea & aurea distinct? C. aurea is among the Collection, but differs from Hooker's description & figure, — seed, stipe and ~~stam~~ anthers, which are all equal, seeds rough, etc — If C. lutea has really the 2 long anthers and smooth seeds figured, it must be distinct. Has ever any one else examined it?

Yours truly G. Engelmann

Did I ever tell you that 2 months ago I examined the Papaya, Asimina and found your figure of the fruit in Gen. illustr. reversed. The ventral side is the swelled one, and the different fruits stand almost horizontal & — 5 in number. The above is a correct copy of my figure drawn from the living —

I have received from Berlin Braun's Continuation of his examination of Chlorophyceae Klotzsch's Herbarium and — a Latin translation of my Cacteae! with preface by Braun. — 2 or 3 new Cacti were collected by my brother; one of them, a new Echinocactus of the form of Mammillaria tends to unite both genera. This one now comes from Pike's Peak also (as well as Cereus viridiflorus), the other Colony from them yet!

St Louis Jan 8 1861

My dear Gray

Here is New Year past, and I who commenced to pester you with letters 2 months ago, have not answered 2 or 3 of yours! A bad beginning of the year. The fact is that Capt Simpson and my Brother kept me so busy, that I could not even attend to my own legitimate business.

I shall write shortly to Wright, whose letter I received some 6 weeks ago. He sends a "new" Macrillaria, which turns out to be M. pusilla, only more vigorous than the Texas specimens. — Capt Simpson seeing that he could not get a full report from me in time, wanted to have something about the Artemisias, Sarcobatus, Ephedra and a few other woody plants of Utah, which I have elaborated for him as also the Cactaceae, which letter I have sent on yesterday, and have for the present closed my labors in that directions, but will continue to work at the Utah plants after a while, first attending to my own business. — Capt Raynolds, with whom Dr Hayden was at the headwaters of the Missouri, asked me to know what I would demand for elaborating the plants. I told him, for a full report I

The spores are not sufficiently ripe yet but the characteristic bilobed bulbs decides. I wish you could get Mr Wm Booth to examine and collect specimens at different seasons. I should like to see it in early spring in summer, fall and winter. I do not understand exactly how the bulb can be so naked of leaves in November and covered thick all over in May or is it not so, —

Boisier has at last found my parcel of Euphorbia in some corner of the Candolles house! He makes my E. tithymaloides (Bot Boccon) a var of his Citrus E. Berlandieri!

Please send whatever you have for me, and Journal of Lin. Soc. —

I shall pay those $18.63 to Tandon soon.

Your Party have overshot the mark. Your Senator Wilson glorified that they now had the South at their feet, under their heels and would crush it to powder; the South, however, prefers not to be crushed. — Whatever may be the course of events we that are not fish nor flesh in Missouri may fare worst if the Union of the Agricultural and producing States, especially of the whole Mississippi valley is not the final result which many sagacious men believe. — No coercion is the firm purpose here

Ever yours G. Engelmann

1861 will be an eventful year on both sides of the Atlantic.

would ask $500, and the duplicates for distribution. That seems to have startled him. I suppose it was too much. Neither Whipple nor Simpson paid or pay anything! I do not know whether R. will send Hayden plants. If he had done so, I would have come to Cambridge in spring or summer to finish the more difficult and doubtful part.

In reviewing the Ephedras I find that the species from western Utah (Carson Lake) is new and distinct; I have also revived Torrey's E. trifurca (Emory's Report), which I have from Wilkes' expedition also; Wright's western species with the membranous scales also belongs here; I do not know the plant of Berlandier and of the lower or middle Rio Grande; but suppose it is the same as Wright's and this therefore really antisyphilitic so that at all events we have 3 western species.

What do you think of Buckley's new species in the Proceed. Acad. Philad. p. 443? 4 new genera!!

If you are 50 I am 52, running a head of you! But no, we are not growing old as you fear — only in the best age.

I adopt for that Cow Lonicera Wettsii, name as you suggest.

My brother, who is here now, says that Symphoricarpus is perfectly white; it is perhaps distinct. We do not have Bot. Mag. here.

You quote for Ceanothus edifolius Hook. from Fremont; have they been edited since?

Thanks for all the things you send, especially the Euphorbias — Those named by you are correct, 2 are new named, one of them is my E. setiloba (perhaps without the gilia form with E. polycarpa). The other quite new to me (vestitillata) which I will study directly.

Lepidium flavum I had found out. The specimens are very complete, and deserve figuring, as being so different from the type of our Lepidium.

The other Cruciferae and I make with scarcely a doubt Draba densifolia Nutt. a miniature form of the Aizoides tribe, or little leaved etc.

Physaria bothers me. They are so exactly = Vesicaria that it would be against nature to put them in a different tribe! The distinction is artificial. I have several, probably a new one from my brother, not = Geyeri, but since this difficulty about Cleomella enters its seeds and anthers, I doubt a little Hooker's accuracy. — The upper Western Physaria (Hayden) has always 2 ovules in each cell — one for Utah 2–6 or 7 !!! other from Utah always 2. — But Vesicaria also is quite constant at all. V. antitoxa of Hayden differs from that of Fremont; the former is no doubt Nuttall's plant; ovules 2–7 in different specimens. —

I forgot that I have not written to you about that Stoctes from Cambridge. It is a very large form of S. riparia!)

what the Union is worth and how it is necessary to them, allow meanwhile ~~any~~ the Constitution as well as the State laws so as to do away with ~~any~~ objectionable feature, and with the sources for new agitation — and in a few years the Union will be reconstructed. I see no other way. This period of transition will present many difficulties — but civil war a great deal more. — This revolution must be carried to a favorable ~~end~~ peacefully, or else the cause of freedom (what!) in the whole world will suffer dreadfully. You of the north must look the fact of Secession or Revolution, call it as you will, in the face and act accordingly — it can not now be prevented, it is accomplished. It is a revolution as well as that of 1776 whether it will lead to the same good end, remains to be seen. — We in Missouri are rather neutral, but want a great and powerful Union or Secession at all events, no splitting up in petty Indian or Mexican tribes, as some (I believe unnecessarily) from the history of 1776 1787–9 & 1814 ~~[illegible]~~ a safe guide. As for living under South Carolina we do not think of it. Yours ever

G. Engelmann.

St Louis Jan 28 1861

Dear Gray

Here is the MSS for Euphorbia. Please send a proofsheet with them to E. Boissier as soon as possible, as he is printing or will soon print his Euphorbia for Prodromus. If I get permission I will send the diagnosis of 2 new species of New Guinea, which I have already got the „visa" of Boissier (they were in the last and found package) to be added.

Those Australian Euphorbias seem all to belong to E. obtusiflora var australis; but I will reexamine them carefully and report.

I shall be delighted to see Goodeniaceae paper, and also his Wedinsdan Flora, mentioned by you in Silliman.

I suppose De Candolle will see Buckley's new Quercus species in Philad. Proceed.

and make what he can of them.

I may take up Ephedra one of these days and ask for your material! But I have too many other things on hand as yet. I continue at the Utah Collection, and may get Hayden; in that case I shall have to make it possible to spend a couple of weeks with you and Torrey, after a preliminary study here. —

I have Bridel's icones, but Shaw does not have Bot. Mag. nor Hook Fl. nor Bulb Sulph, and the present times shorten his income so much, that he won't buy any thing just now.

My Ephedra pedunculata from western Utah is, I believe a very distinct species.

You say the leaves are long in Eph. gymnoclada, — mine are very short; the name, if even proper, might then be changed to E. filifolia, such name is not preoccupied, I believe.

Do not forget that Isoëtes in early spring!.

We in Wisconsin are for Union as much, I believe, as any southern or slave state, but absolutely against coercion — (you distinguish States or individuals, which seems quibbling). An unwilling Union is bad, and such seems to have been the condition since many years; — a forced Union is impossible. — Let the South alone, let them find out

that the human race and the century has made progress, that peace congresses have not been their aim, that difficulties can be settled without killing one another, show to monarchical Europe that republican government is not a failure, as they insultingly prophesy but that even separation, even revolution can be accomplished peacefully in this republican country.

What the North Slave states will do remains to be seen — they would permit secession, that seems certain; notwithstanding Senator Johnson and the recent election in Tenessee.

I am sorry that you met with the misfortune to be wounded, but if that will prevent you in joining in the fight against the South, I think you will get thank providence for that loss of your thumb!

We are here in St Louis perhaps worse off than any other section or city — just exactly between hammer and anvil! And we have the ignorant and excited of both parties afraid of one another and arming against one another so that possibly there may be the first blood spilt here in Stlouis. A part of the Germans, headed by Frank Blair etc is on one side, the so called Minute men on the other. Write soon!

Ever yours truly G. Engelmann

Euph. polycladus Boissier Cat p. 10 is said to be Wright 1848 that must be anno 1848 not uno 1848 this is in different Herbaria E. pedicellipes and E. prostrata. You ought to say therefore Wright leg. 1848. But I doubt whether it is really without from E. petelorida. Lindheimer has collected the same form on the Llano.

Stlouis Febr 13 1861

Dear Gray

This was written for Boissier but may interest you too. Thanks for your botanical and political communications.

Your Euphorbia 251 Broadway is a form of our old friend, the polymorphous E. dioica for which Boissier, because that name is incorrect substitutes Bertoloni's name E. adenoptera (E. arcuata Bentl. is the same). All the forms of E. dioica have the involucre deeply slit on the back, which probably made you mistake it for half an involucre — this not more than the other forms. But there are several other peculiarities in this form; one of which is that it has only the 2 posterior glands and appendages; the anterior ones are wanting; another is that the posterior side of the ovary is almost glabrous, the anterior densely bearded! Many transition forms are found to unite it with the regular E. adenoptera. It is, however, distinguished by Klotzsch & Garke under the name of Anisophyllum densiflorum Euph. p. 28. which I could not nor could anybody guess from the description; but I had

examined the original specimen in Berlin and have drawings of it. — Another still more different form is the one sent by you from Nicaragua (Wright) — the same I have from Martius, Brazil. — Still I suspect it not specifically different.

I have now here Hayden's coll. from the headwaters of the Missouri & Yellowstone. I am just arranging it. The specimens on the whole are better than Hayden usually makes them, and many very fine things, but perhaps not much that is new. I am not permitted to retain duplicates — expressly forbidden! — What binding force have such clauses made by Washington officials? There are generally plenty of duplicates. I have the plants for inspection only and am to give to Capt Reynolds an estimate, of what the working up would be worth and how many plants would be desirable and at what cost. — I am at a loss how to proceed. — What would be your advise? — I mean to work at these and my brothers plants together.

The South, Cottondom, as you call it is out of the Union, and force can not bring it back — never! — Has not this been an "irrepressible conflict" since 1787, put off by different compromises, but still irrepressible. And why make a bloody and destructive conflict of it, destructive to both parties? Why not a peaceful separation? Why not give up those forts, which were never built for "coercion" but for protection; why not let the South try its long desired Southern Republic peacefully, and not embitter every relation, and cut off the hope of a reunion. — We all approve the course of England in advising Austria to give up Venitia rather than incur and risk a great European war, to enter into treaties etc. That Austria would do it, is no proof that it would not be wise. — And what is a solitary fort or two compared with the glorious province of Venetia! Give up the Forts to those States who (whether from the same good cause or not does not matter provided the causes are satisfactory to them) have declared independent just as the colonies did in 1776, and do not imitate the bad example of George III and his Lord North, but show

St Louis May 13th 1861

My dear Gray

I just get a letter from Boissier in which he informs me that the name Euphorbia gymnoclada is preoccupied by him and that he names the plant E. Xanthii Engler. It stands close to his E. peganoides, also from Mexico. He has finished his work on Euphorbia of which he describes 680 species, a few more, he says, than I would probably admit.

I do not hear from you but hope you are all well and calmer than we can be here.

Seemann wrote me a few days ago about Chilopsis and Gregg's Bignoniaceae. That was the first time I opened Gregg's packages after they had been in your hands. I found many in a pitiful state, and found that I have only one of

mind refer balls, with what good result, time will teach.

I feel as if I ought to settle my earthly affairs, not knowing what the next day will bring. Thousands and I believe I do not exaggerate, tens of thousands are fleeing the city, and monetary affairs are in the worst possible condition. — Gen Harney, however, commanding the respect of the citizens and seeming to ~~obey~~ his best to act fairly, has produced a sort of calm now for the present, but even in the best and most favorable turn, affairs may take, a speedy peace, Missouri will not recover from the shock and the deep seated animosity, if not hatred of the different classes against one another, for many years to come.

My money affairs are also very much deranged and I must decline, for the present any further subscriptions for

the two manuscript books which contain his notes. Might the other be got in your hands? It contains accounts of the plants from No. 676 – 1234 collected from Tacubaya to Mazatlan.

—

I have retained this letter till I could inform you that I send you to day (May 24th) a small package containing the female buffalo grass. Of the male I have only a single small plant, which I will try to propagate this season, so as to distribute it next year, Marte parrente.

I have added to the box a specimen of Lewisia redviva, a few Opuntia Missouriensis (the Paw-paw) Op. fragilis (the smaller) and Mamillaria vivipara. They are all Cactaceae which have been growing in pots on my roof for many years and all the time I was away in Europe, without any care or attention; and will stand your climate better than your greenhouse provided they are kept dry enough.

We are here in a miserable situation, between the infatuated red-hot republicans, Germans led by unprincipled demagogues such as the American Blair and the German Jew Boernstein on one side, and the scarcely less unprincipled Legislature of our state — With all the distracted and divergent interests of a border state and border city we have the national animosities of Germans and Americans which have been carefully nursed and excited and which have come to a fine development now. You know from the papers that it has been attempted here to inculcate respect for the law and love for the Union with

botanical collections — such as Wright's. Times may change, when I shall be happy to recommence. Please continue for the present to send the Proceedings of the Linnean Society, a number of which I received the other day from you.

I just get a letter from Fany dated Fort Kearney May 16th. He expects to be at Denver by the 30th. He sends fragments of Buffalo grass; says the female is quite rare and difficult to find, the male is common, and he promises to communicate other interesting observations.

I forgot to add that Boissier thinks the plant from California which I supposed was his Euph. Hartwegii, is "rather" E. albo-marginata. I must confess that I can not distinguish them and think one is a form of the other.

Please enclose the lines hereby sent to Wright, when

you happen to write to him.—
What is Tony doing?
Has he retained his office in
Wallstreet?

Write soon

Very truly yours

G. Engelmann

St Louis July 8. 1861

My dear Gray

Your friendly communication now many weeks old would have been answered long since, if as you say yourself, one had a heart to write. But here comes friend Parry ~~and~~ with a letter full of plants fresh from the snowy ranges of the Rocky Mountains no Politics, not a word, only fresh, virgin, undefiled nature I send you all, letter and plants and hope it may please you and refresh you as much as it did me!

His plan of joining the Waggon road expedition is not a very good one, as it takes him away from the higher Mountain ranges, which Young are avoided by a "waggon road" though it may give him support and transportation.

Please return the letter soon but you may keep the plants if you only send your remarks on them.

I am arranging parts of my herbarium, which has been undistributed heretofore, waiting, alas, Gray's sets etc, and in regard to

you as to thousands more in the North, that this war does not preserve what there is, but that it ruins not alone the South, which your extremists would delight in, but probably more the North itself, and especially its innocent boarders, who do not want any of your fights! —

You speak of Agassiz and his violent warlike propensities. I am not astonished at it. You have known long since, that suavis is a term ~~though~~ eminently applicable to the plant is not always so to the man! He is a despot such as many eminent men are, but never the most exalted, such as a Humboldt!

I am glad to see this most abundant harvest — it is a really glorious sight, our harvest fields and our orchards — there has not been such a season for 10 years or more — Not too dry, not too hot, not sickly — Every thing in nature almost perfect — but man! — For two reasons, we must be thankful for the abundant harvest; the first is because living gets as cheap as possible so that our starving townspeople made so by Lincoln's blockade,

to Wright's plants especially I am often disappointed looking for the numbers in the Bound. Exper. Bot. As the results of his plants were sold, the buyer has a right to expect a catalogue of the names, as they have been worked through. When I am all through with them, I shall have a list of numbers not found in the Bound Bot, which I would like to send to you if it would not give you too much trouble and take too much time.

If I could do as I intended I would spend a few weeks at Cambridge with summer or fall, I would do the work myself. — The same with Fendler's.

Don't you happen to have a Catalogue which you could send, so that I could copy it?

I have seen such blank Catalogues, in Europe, where say 50 or 100 (round numbers) of lines were on each page and where the names were entered, when ever found or made out. Such catalogs were used for every numbered collection, and were kept for valuable and easily accessible reference.

Shaw and Fendler have used up all my brown paper (Genus covers) Could I have more, or is it necessary to wait till a larger lot is ordered and manufactured?

I can not begin to write in regard to our affairs here. From your letter I see that you have a very imperfect knowledge of the state affairs here, and such is the case, no doubt, generally among you. I suspect that this is true on a much larger scale, that North and South do not know or understand each other, and especially that they have entirely misunderstood and misappreciated each other in the beginning of this business. — My only hope and wish is that an honorable peace and a peaceful separation will terminate these gigantic and suicidal efforts of both sides, preparing the way for a future reconstruction.

You say that a government has the duty and right to sustain itself. Right! But not to speak of the fact that the "government (for the whole country) based on the consent of the governed" does not now exist, it must now be plain to

and especially to your own J. G. Adams who counsellor to "part in friendship" rather than continue such a disunited Union. But again enough. —

May thanks for this pamphlet I see that you adopt the genus Xanti but would prefer Boissiers Xantusi; as yours is already published Boissier ought to conform to your form.

Can I get a specimen of the Canadian Gymnopterous for you? — I suppose you have the G. festinacum; if not I can furnish you specimens from Berlin where I have collected it more than 30 years ago!

I admire your industry and prorrentiveness; I am doing next to nothing.

Have you got the Ouffalogrus? living? — The Male has now flowered and is propagating by stolons. Lewisia has withered away; whether living or not, I do not know.

Your announcement that you and Mrs Gray intended to visit us — has charmed us — if you may imagine how the "fait accompli" would have delighted us — well — next year? —

Ever truly yours

G. Engelmann

2, can get something to eat, and 2d by because the farmers, a most selfish people and difficult to reach, are made to feel the consequences of our present state of things, and are all gradually turned into anti war men.

We have had another murderous attack by soldiers, which your papers will have told you, was provoked by firing from the ranks of the people — while the fact is, that the musket of one of the soldiers probably accidentally went off, whereupon his comrades, no doubt firing in attack, fired into the crowd and in the houses and killed 6 or 8 persons — this was the 3d murderous shooting, and the ~~last~~ most unprovoked one. And it was to my utter astonishment the first where a regular inquest and judicial examination followed — the latter not concluded yet. — What confounds me most is the absolute lawlessness, into which everything has run, here as well as in the whole country, and I contrast our present state with that of your people in 1770 and further; why, the English crown and its ministry were ten times more careful of how they acted lawfully than we are now. But here the people seem to be in a stupor

and either do not know their rights or dare not maintain them! — However the Boston Massacre of 1770 preceded 5 years the days of Concord & Bunker hill — and we shall also have our liberty — some day! — now we are "coerced" —

You say that St Louis would dwindle down into a country village. — no doubt of it, if the war continues. No doubt that we would thrive best in the whole Union! But how can force and might restore the Union? Stymie will tell me; just as it did in Switzerland 8 years ago. — But the cases are vastly different. No, — peace is what we want, with a hope of future reconstruction, — at least in the Mississippi-valley. — Separation will injure St Louis very much, — ~~but~~ more, as many think here, if connected with the northern half, less, if attached to the south; by prolonged war more than either.

Enough of this — we (you and I) will not be able to settle the affairs, and ~~will not~~ may as well drop the matter — though I shall always be glad to have your views.

— Yet — glancing over your letter, I take notice of two more points: "Gen. Harney did manage well" — but not to the satisfaction of Blair & Co, and was superseded and was in disgraceful (You or your older friends must recollect the Blairs from 20–30 years ago — too well, to admire them now!) — I do not defend our Governor however who has acted most ~~ridiculously~~ foolishly, not to say criminally or both — but no such thing would have happened, if we had had a soldier here like Harney instead of scheming unscrupulous politicians. Much more might be said about your views of the affairs in general about "peace not worth having" about "suffering in the Union better than prospering out of it" etc. ~~Oh~~ Some of the catch phrases of the day are very curious; so the "eternity of the Union" — eternity of human things! — "Preserve the Constitution" as if the 20 millions of the north could not live under the Constitution, well and peacefully preserved, and as a more homogeneous and therefore happier and better united people, under which 30 millions lived a year ago, and 5 millions 70 years ago! — I refer you again to Jefferson, to Benton who wanted to separate the far west,

St Louis Aug 17 1861

My dear Gray

Right glad was I to get your letter of Aug 6 – I have sent the enclosed sheet to Darby and have received from him to-day the letter sent herewith, with a few plants, which you have already (Chamaetis etc) and the enclosed that oramolomed bell-olyxed Pentstemon is very curious.

I am afraid I am worse than you say Torrey is, in skipping from one thing to another and completing nothing. What branch of botany do you think has occupied me for the last month or 6 weeks? I have dabbled in the Centrifornia and studied fungi!

The diseases of our grapes, which destroy often ½ or ⅔ of the crop have induced me to investigate the fungi connected with them. And I find 2 very different kinds, a Botrytis on the pedicels and leaves and a Haemaspora in the berry itself. Both producing different kinds of the "rot". Now, if we have not warm, I would at once communicate with

Thanks for the Pamphlet. They have done Dr Cs

I was surprised at finding Pallma in your letter. It looked so natural, just as I met with it every where in France and Germany a few years ago!

Dr Stolz and is assiduously working at Algae and their development and transmutation, in which he thinks he has discovered wonderful things. He takes a great deal of my time in order to make me understand his views, but I am not convinced. Still I see in his investigations many things which I have not known before, but he is so visionary and jumps at conclusions every where, which are I think not justified.

I have not seen Rennert, I do not feel like calling on him mixing with the crowd of soldiers always surrounding him.

He begins to fortify the principal avenues to the city.

When will you give us peace? I am sick of this slaughtering and all the miseries attending it. This blockade is ruining St Louis, and the city is full of persons who have absolutely nothing to live on. Write soon

Ever yours G. Engelmann

Mr Curtis about these matters. But as it is, I have to wait a little. How is he doing? Do you know anything of him lately?

To understand these fungi I had to study a great many others — of course, to get the hang of these wonderful and beautiful vegetations, which prove so attractive that I do not wonder Mr Curtis has thrown aside all other botanical study.

Your invitation is very kind. But how could I leave now home and friends, when the worst is perhaps coming. It is not at all impossible that St Louis in the west will be, what Washington is in the east, the great prize to be fought for, and only think the horror, many imagine, that the "Missouri Bot. Garden, with its substantial buildings and the long and solid walls surrounding it, ~~will be a~~ situated on an elevation in a large cultivated plain ~~can~~ not fail to be the principal battlefield!!

No jesting about it.

But that is not even the worst for us. It is the embittered feeling of the different elements of our mixed population, which threaten horrors of all kinds in our midst. —

So Wright has the courage to stand up for State rights, though a full blooded Yankee!

I am glad you was able to take a trip of recreation for yourself as well as for Mrs Gray. I long for it too but as we have had two years a short time ago I suppose I have to be content now. If it had not been for the war I would by this time been able to postpone for retirement from practice. — But all these delightful visions are removed to a very dim distance!

Still, if they do not burn my herbarium and my library, and my microscop, and what is just as essential, not kill me, I will work on, and never give up hope!

Are you aware that in your "How plants grow" are some gross misprints? I have a have marked in reading it with George

enough that the time was fulfilled." "A new order of things will arise, and a healthy rivalry between the northern and southern republics will it must be hoped, prevent in future such a falling off, such a degradation as we (in our public affairs at least) have witnessed since I am a citizen of this republic — 25 years!

Your letter of Nov 11th, I must confess, surprised, I might almost say, shocked me, I did not think you so bloody minded, harsh and one-sided, but I suppose, hearing and seeing only one phase, one aspect, and being far removed (as suggested before) from the scenes and sorrows of fratricidal war, you (I mean all your people) can well afford to indulge in this way of thinking. Well, the future will soon, I think, clear up our doubts, and rectify our errors!

Yours, truly as ever

J. Engelmann

Send bill 230 labels of Parry's & Short, if you can spare them.

St Louis Dec 9 1864

My dear Gray

I fell into my lazy ways again, but the MSS you wanted back has been sent by Short to whom I entrusted it long since. Grisebach's letter I hereby return.

I was more busy this month of November and so far in December more than at any time this year. The unusual temperature and other meteorological conditions and perhaps also the political and military conditions have brought us an unusual amount of sickness. In the military hospitals here located very considerably in large store or hotel buildings in the heart of the city (at least two of them) are near 3000 sick & wounded, and we can not but feel the deleterious influences.

Well, I was so busy that, with the short days, I could make very little headway in my botanical studies.

I have paid a good deal of attention to Parry's and other Gentiana and will work them up for Parry's Report as also the Poaceae if Torrey does not prefer to do that. Torrey was not

answered a letter, I [illegible] about these thirty 6 or 8 weeks ago. —

This Gentiana Fremontii is a very pretty thing and must be different from Prostrata. Whether the other is the real Prostrata seems doubtful. I have not been able to compare European specimens, but Chamisso's which you had the kindness to send, is certainly scarcely distinguishable, except by the style and the 5 parted Corolla.

Gentiana Tenella which I could well compare, having alpine, norwegian and altaic specimens which fully correspond among themselves seems to me decidedly different from Pursh's plant. My old unpublished G. Utriculosa is a very various and very distinct species, soon to be distributed; it will also be well to examine in this connection my Brothers Utah Gentians.

Keep those Regel books etc till you have more to send.

I have not looked over your handbook again for the misprints, but will make it a point to do so.

I do not know from Parry whether he is ready to make a report for Silliman. I hope he will attend to it before he starts on a new expedition as his has a mind to do.

Among the persons who bought all our Hardy & Tender plants is Mr Rene Lenormand, at Vire, Normandie, France. He may take the Parry plants also.

Short complains that he has most of them already in Drummond's roll: the rarer or new ones Berry mostly wanting in his set.

Written Gillbach's letter, remember me to him, if you write. His handwriting is awful, perhaps worse than mine.

You "Yankees" dont see much of the miseries of wars. We have it and them all about and around us, and therefore sigh for peace and have come to the conclusion that peace and separation are a great deal better than war and union which causes destruction. How can any sane man talk about restoration of the Union! And if restored such as it was 2, 3, 5 years ago — would that be desirable with all the bitterness of Kansas wars and John Brown expeditions ... No, it is evident

from the other personal standpoint my own ailments suffer so, that I may for many years have to rely on the practice of Medicine for a living — while in prosperous times I would henceforth have been able to devote all my time to the study of my favorite sciences ——

But complaints are useless!

Torrey did not answer a letter about Pines. I suppose he did as I often do, wanted to give full and correct information and because he could not, did not write at all. What is Torrey's age?

I believe I told you that I have got from the Hale of Ohio Euphorbia Tetrapilifolia (inaequilatera) E. Geyeri, E. glyptosperma and E. commutata.

I am in Hurry that he has sent you his Mss for Hill to run. I shall soon do the same

Ever yours

G Engelmann

St Louis Jan 10' 1862

My dear Doctor

Examining those Gentianes I have reexamined all our Gentians the western as well as the eastern thoroughly and critically, as also many European ones. The first and most pleasing discovery is that that Gentiana Bromatii is identical with the Siberian G. humilis Stev. of which I have specimens of Ledebour, it can not be confounded with G. purpurea, of which I have seen no European specimen however. Another discovery is that Griseb. is not absolutely reliable in the Prodromus, though vastly superior to many other colaborers.

Gentiana tenella? is certainly distinct. I have been able to compare specimens from the Alps, Norway, Altai, which all agree in their characters and in the difference from our plant. G. tenella is nearly mono (in my specimens always) 4 parted not 5-parted as Griseb. says it. I name it G. debilis.

Gentiana acuta, the larger form certainly does not deserve that name. I have no other specimens in my Herb. and should be obliged to you for a fragment of the ordinary (smaller?) form of that plant, even if only a few flowers, also for a few flowers if you can spare them, of G. propinqua

which I have never seen. I have spoken of Nicollet's collection named so by Torrey; but mine at least are G. tenuis, not propinqua. G. tenuis and G. acuta are so closely allied that they must come close together in a systematic arrangement. G. acuta has also been collected by Hayden and by my brother. —

The latter has in Utah collected a most beautiful little new species, which has the character of the calyx of G. caespitosa only in excess. (?) it might be named G. heteresepala, though that name would designate many other species also, but none as well as this. —

Another species which I have never seen and should like to get from you is G. chrysocoma vera. — × see below

I am a little puzzled about those Rocky Mts. Pines. Nobody notices Pinus alba in those regions, but Parry says he has seen it in abundance and sends a cone very much like the eastern alba. Do you know any thing about that tree? Why Parry did not get more specimens of his pines, nor fuller ones.

× I can not conceive how our Gent. Saponaria could have been confounded with G. Pneumonanthe; the teeth of the Olira are quite different, not to speak of other characters.

~~G. Pneumonanthe~~ G. Saponaria grows also in Illinois and here.

Asclepias pauciflora (sine corona) in southern Indiana (and Illinois?)

G. Andrewsii & G. Saponaria in Torrey & Gray FNA are figured incorrectly in the details.

I can now find only 2 typogr. errors in "How Pl. grow" though I thought I had seen more.

p. 36 l. 1. orange coloured or shrivel; or better, orange, yellow, or whitish.

p. 69. l. 6 for below petals for stamens.

p. 153. l. 5 " " would better read few instead of one; I have 5 species on the roof of my house all the year round. (N. Op. vulgaris is not hardy here, while Op. Rafinesquii is quite so. — Have you got Raf's. Lirioy? —

I hope you have got back all your notes (Parry & Griscom) connected to me — the number of Proc. Linn. Soc. has been received. Many thanks. As soon as I have to pay you some money I will also pay any instalments to Recreation Association.

My time is very limited now my practice having increased since 3 months — so that often not more than one hour of daylight can be devoted to Botany! — But how I detest that work! In every respect — generally and publicly and individually.

At first view the general situation of property and life, and perhaps worth the general demoralization which it brings along, and which may not last for half a generation or a whole one

Prof Gray

St Louis Febr 4th 1862

My dear Doctor

thanks for your letter, and various information. Do you ever hear from our friend Braun in Berlin? After 18 months I just had an excellent letter from him and in it his and his wifes Photograph full length figures, but very good. — How old he has got! No wonder; after loosing a grown son when we were in Europe, he has now also lost the other, a very gifted young man, who studied chemistry and geology in Goettingen.

Braun has the kindness to send me leaves of the original Pinus Llaveana and cembroides (seemingly identical) I want now leaves of Newberry's P. cembroides to compare; ~~P.~~ Llaveana of Parry I have from P. himself, a small fragment. — I think I shall get them right after a while.

~~Braun~~ Braun had also the kindness to get one of his daughters to copy for me Gasparrini on Opuntia-point. It is singular stuff, though he has already seen that pulpy cells are attached to the seed coat.

I was astonished to learn from Braun that scarcely anything is known

western states, especially in Illinois while the foul corruption of almost every thing connected with the Washington Government is repelling enough for every thing sound and healthy, that may be left in the country. And you and the true Union men ~~will~~ intend to reëstablish such a state of things, which, though it may have been suspected long since by many, has never become so patent — so as to become a shame all over the world either to the American People or to its Institutions and its Government.

Here is the great question, so important for our future and I wish I had light in it. Many good people wish for something like an english aristocracy — but they are very shallow and unobserving in such a wish. — but enough!

You put me off with the cold comfort that my property may be of use to my son! But do you not understand that I myself want to be benefitted by it and that soon!! So as to be able to „throw physics to the dogs" as you advised years ago —

My wife sends with me our best regards to you and Mrs Gray.

Ever yours
G Engelmann

I write again to Torrey. Is Thurber in New York working at his — written down?

In Mrs Wislizenus we have a strong yankee lady (sister of Mr Marsh now in Turin) to light our path to duty as she understands it. Unfortunately she can not even properly direct her husband.

about the original structure of the pulp of fruits.

You shall have Ribes and Gentians this month, but I expect to publish them at length, with figures in our Transactions, and they will be out, I hope before Silliman will have them. —

Many thanks for the interesting fragments of Gentians. I am afraid you have cut that G. perpinqua from your herbarium sheet — that is more than you ought to have done.

Now about Abies.

You say: A. alba I learnt to know at Quebec. — Do you not mean A. nigra? Is alba not the tree in your garden and so common in New Hampshire and also in Wisconsin? with slender, pointed and whitish leaves and small subcylindric cones.

If that I have specimens and it grows also here in Gardens.

But nigra is unknown to me, though figured in Michaux. I now suspect Parry's plant to be this same, or something between this and A. Menziesii. I include you a cone. Hayden has collected the same but no leaves or branches.

If you can spare me a cone or the tip of a branch and a few leaves of your Canadian nigra I should be again much obliged to you.

Put my part of Bourier's package to any other thing in your hands and charge me with the third of your expenses. I expect you will never get Florida, but get communication with Dr Chapman by and by and with all our other friends down south —

You are right! We will not quarrel, and time will soon decide between us. I hope your relations did not suffer too much from those famous Burnside storms. I have also many relations in the Union Armies, from Lieut. Col down to the Private, trying to subjugate, most of them Missouri, others Kentucky: —

If you still can speak of liberating the South, you are of course perfectly correct in your whole argument and action but your premises do not seem to be well founded; and I expect you will see cloud gathering even in the loyal

belongs here.

You have no doubt received Buckley's new Texan plants. Have you examined it? nearly everything must be old — already gathered by Wright, Lindheimer, Bigelow, Drummond etc. — What a confusion — how to undoe all that again? I am afraid our good friend Durand had a helping hand in it. And that Lalin!!

I see from your Catalogue that Parry also called a "O. albicaulis" pinnatifida but having no specimens I can not decide which is which; but if you approve and think proper you may introduce the substance of my above remarks — or I will write it out myself more fully if you wish.

St Louis Febr 28. 1862

My dear Gray

What do you think I just get up from? Reading numerous prize essays on the culture of castorbean & flaxseed. "Nolens volens" I have to do it and give an opinion!

But I had a better reading to day! a long and excellent letter of our friend Torrey about Pines, coming on top of yours (yesterday) on Abies alba etc. Now, I suppose I must soon exhale turpentine! —

Many thanks for the specimens of A. alba. The leaves ~~of~~ of your seed are <u>obtuse</u> is that a character throughout? The leaves of the cultivated and the White Mtn plants of that we must now call A. nigra (though in the White Mountains it looks whiter even than Balsamea) are very acute and much more slender.

The leaves Parry seeds are even stouter than young and acutish.

The leaves of A. Mengiesii (Parry) are very acute, almost spiny, and stouter than any other.

I find only the following of the section of the Norway spruce described from N. America

A. alba
A. nigra (rubra)
A. Mengiesii
A. Sitchensis

Is not this Rocky Mtn plant different from A. nigra?

You have the specimen of Fowler (no cones seen), and no doubt some specimens of Fremont — all like the Norway spruce characterized by the falling leaves in Herb.

Can you let me have a leaf of fragment of leaf of Pinus strobus monticola; is that not over so called Reflexilis (N. Fowler, Parry A iii) (Strobus has ~~dentate~~ serrate leaves, flexilis entire ones)

Also a leaf of Pinus Lambertiana.

I had not known that Torrey had given up his Herb & Libr. to Columbia Colledge — he has done well, and I hope he may enjoy the pleasant residence for a good many years yet.

The other day I got a letter from a Mr Austin, directed by you to me.

I shall attend to these things about Ottoman, and mention your note to Prof. Agassiz.

this Linum I ran distinguished 26 years ago in Arkansas as L. oppositifolium, but have been obliged to abandon it. The Arkansas form however is exactly the same as his N. Jersey plant, also in swamps, with smaller fruit etc. This Spiranthes I can not name, as I do not know the Orchids. There is no doubt though that we have several species not or not well described. I have found only lately that our largest species which I had always named S. cernua is very different from the true cernua which I gathered abundantly in N. Hampshire. It is leafless at flowering etc. We have here this largest (perhaps odora) and 2 smaller species, one of these leafy the other leafless. They ~~both~~ all belong to your Flora.

I enclose a note about Corolla of Isoetes & Pinus resinosa.

I have got the volume XII (Baltimore) of American Association — will you pay for me contribution to date and send me with the other things the volumes yet due? Send me your bill for the different dues Boston, Found. Lian. Soc. etc.

No politics to day; the south has been badly whipped, but as to the Union falling, you are mistaken. Our papers are as full of intentional misrepresentation not to say lies as our government is full of imbecility & meanness.

Is that our fine Fulton, whose death the Telegraph today announces?

Ever yours

G. Engelmann.

I had occasion to revise some Oenotheras and find that O. pinnatifida Nutt (Hayden, Gordon, Wislizenus if Algiellet without fruit) has, as noted by Nuttall in Flora Bor. Am. pinnate seeds, not as you have it in N. Fendl smooth seeds. — Seeds pinnate striate or grooved, ovoid, acute at both ends (O. coronopifolia (Oper Fendl) seeds larger, obtuse at both ends, otherwise similar).

Only a few specimens of Fendler (marked with his private number 239) are this pinnatifida all the others comprised under publish number 223 and 224 (private pencil number 243. & 251) belong to a form which may be Nuttall's trichocalyx (unknown to me) but which I can not distinguish from albicaulis and here also belongs a form sent by Wislizenus and marked by you "O. pinnatifida var" very hoary villous — canescent — they all have the small smooth seeds you speak of in N. Fendl and they are besides characterized by divaricate, very slender often curved capsules; the true pinnatifida, as I at I take for it, have suberect capsules. O. trichocalyx and O. pallida I do not know.

— I see that you speak of these difficulties in N. Wright — but you seem to confound two good species; your remark that Nuttalls descr. of seeds in Flora must refer to coronopifolia is erroneous (see above) and also your remark that he attributes those seeds to albicaulis — see Flora page 494

I see that Nuttalls trichocalyx with smooth seeds must be the above mentioned form of albicaulis — and you say that pallida also

the cry! and view expressed

But your wish in a letter some time since — is mine too! Time will soon teach us what speculation can only very incompletely fathom — therefore away with discussing

Ever truly yours

G. Engelmann

You sent me in 1855 an "Arenthobium Oxycedri" ex Hook! N. Or. Am. Oregon" &
Who collected it? and on which Pine?
I had forgotten all about it. It is exactly Nuttall's A. Americanum, which I had from Durand. I
It seems to me identical with a plant collected by Drummond on "Pinus Banksiana Rocky Mountains"

St Louis March 24 1862

My dear Doctor

Yours of 15th is received. I get at the same time a slovenly Catalogue of Hayden's plants, which bears my name. I write to him at once to protest! Why are such things published?

If the leaves of Abies alba are always obtuse, we have good characters for the Picea section in N. A.
Only 3 species
1. A. alba foliis obtusis
2. A. nigra fol. gracilioribus acutis
3. A. Mengiesii fol robustissimis spinescenti-acutis.
But I almost suspect one or more other species west. Parry must look out! Can Fendler's No 833 be the same as the Massachusetts A. nigra?

Thanks again for the Pine leaves. P. lambertiana. I take to be correct, a specimen which I gathered at New Gard has, however, much longer leaves. — P. monticola is said to have nearly entire leaves. —

I have now written out Notes for Oenothera and shall follow up balance: Gentianae and Coniferae.

The new Gentianas and Coniferae I shall publish in our transactions and give you only a short abstract of some of them, especially of P. aristata I have fine plates.

I have no specimens of Oenothera, so you may now make out which are Parry's 2 specimens or 2 species and adopt my notes. —

Have you seen cones of P. monticola Is it really the White Pine of the North and east?

At all events it is different from Parry's No. A. which I take to be flexilis — the only 5 leaved Pine collected in that whole region by Fremont, Hayden, H. Engelmann, Parry (with the exception of P. aristata) None of them found anything like P. Strobus! It must grow much farther north. —

No politics — but your party must soon see that the Union is gone — you may possibly subjugate the South and keep it in subjection by immense armies, but there will be no more an Union. This was a phase in the developement of the human race on this continent which is now forever stripped off in blood and strife through Lincolns and his party's statesmanship while J. Q. Adams' "Let us part in friendship" might have given to the affairs quite another complexion — But it is done, and was perhaps the best, perhaps necessary in the ways of Providence.

You will give all you have, life and property for the charming dream of a restored Union — but see what others do and say! How is it going to be with the Taxes? not all, not many think as you do. No tax on me and on my industry — anything on that of my neighbor — is

No time to criticise your wild political gravings out

I never thought that fanaticism could go so far in a Christian. Well, I confess, I was shocked. What an influence the surrounding atmosphere has to bias opinions. I suppose I must confess to the same —

No Time for more now —

I shall very soon write again.

Your ever truly in peace

J. Engelmann

Hypobrichia Nuttallii grows in Illinois & Wisconsin & opp. St Louis Madison (Hale — who also collects a terrestrial form with 'bracteate petioled leaves) Augusta (Meed).

Chilanthes gracilis (Stoll) Richl, acknowledged as good species by Mettenius, is common on Magnesian Rocks on the banks of the Mississippi. Illinois, & Wisconsin.

Euphorbia xanthifolia Gray Prescott, Wisconsin and Saint Anthony Falls, T. J. Hale

—

116 Pary O. pinnatifida Nutt

117 " O. albicaulis Nutt „ diffusely spreading, prostrate" canescent with petioled leaves, therefore intermediate between my α & β.

St Louis May 1st 1862

My dear Doctor.

Above some additions to your Manual — the Euphorbia I have mentioned before (Gyeri, sepyllifolia, glyptosperma) from Wisconsin.

I add to the above notes on Oenothera in answer to your last letters that I was astonished you should doubt the characters or rather the distinctness of those 3 species. The smaller flowered but especially the very woolly throat of calyx distinguishes as also the tuberculated seed distinguish coronopifolia and the former dwarf — is already urged in your Flora. My brother gathered it in both expeditions, at the Pole-creek of the Platte and „on the Plateau between the Forks of the Platte. His and Hayday specimens are identical, with short fruit

ets, but Fendler, growing on an abnormal locality, margin of the water ditches near Santa Fe, are larger, somewhat spreading (the others are stiffly erect & single) with larger fruits. — I describing the fruit I had these partly in view — and you will do well to add to my notes this circumstance — change the fruit: oblong to linear-oblong attenuated at base, subcoside — add also the localities of my brothers coll. which I had omitted. Strange that Nuttall did not notice this plant, apparently not uncommon on the upper waters of the Platte.

But now comes another difficulty. I find an albiscalis with larger flowers roundish petals, short erectish fruit, attenuated or contracted at base — seed undeveloped — I suspect here a hybrid. Yes may mention this as albiscalis hybrida? Pity that Parry had gone before I had found this out — well, I shall write him to Denver and divert his attention to this — he will probably be able to find out. My specimen (coll by my brother on the upper Platte) does not bear seed, though the capsules are large enough — the seed seems abortive. Habit is that of albiscalis. —

I doubt whether albiscalis is O or ⊖ for while in both others I find the rosettes of red-leaves, I never see them in albiscalis. (But Parry will find out — he will also examine into this hybrid — unravel the Pines etc etc

He was with me one day and took with him an excellent Barometer, which I have got for him from Green & prepaying for plants. —

Does Wright get Pines or the Pines accidentally? Comes etc?

Your Oenothera biennis var. in Plant H. Lapham 1856 is the same as all the O. rhombipetala coll. by Hayden and by Hale upper Missouri and Minnesota. Whether it is distinct from biennis biennis I can not tell yet — the principal difference is I suppose in the broader subcordate bracts of the latter. Seeds not seen.

Thanks for the package — Parry got his N. Fendl. — Boissier Euphorb have interested me much and he is very complimentary to me. I shall send you a short memo. for Sill Journ.

Send those packages of Plant Lindheim in my name to Australia etc, if it don't interfere in your arrangements.

Buckley has lit Close the 3d batch — Have you examined them?

5th

Just on the point of sending this off I got a letter from our good old friend Gray, 74 years old now, he says, but with a zeal of 24! He asserts our Isoëtes in a work on Isoëtes and takes particular interest in our American species, wants what material I can send him. Mr Durieu, who thinks that my Winnepesaukee plant is new to America and probably the same as the European new species I. echinospora wants more material. Also of the interesting plant from Pickerel Lake.

Have you had more specimens collected of your Cambridge plant, sent 18 months ago?

Do you know of any body who in September next would take the trouble to collect abundant material at the Localities I had visited in 1856? I would give a careful description of the Localities so that they could not be mistaken. I expect that Isoëtes species are much more common than usually supposed, they are so easily overlooked

St Louis May 14 1862

Dear Gray

I have received your pamphlets by Mail, Martens and Linn. Sow. This last is particularly interesting this time.

You have not noticed my enquiry about Buckley's Texan farrago.

After a late Spring we have very hot and dry weather.

I am pretty busy practising medicine and am tired down in the hot afternoon hours, when I could and do devote my time to botany; but shall send in a few days mss for N. Pary. As I am describing the new Gentians and Pines, — our two — actions with figures, I shall have to give you only a short notice of them.

I hope you take care of yourself, and not kill yourself by overtasking!

Ever yours G Engelmann

I have my Kellogg letter for Candolle. He, Gr, can not understand why we do not separate. — The trip round the Pacific, and every, [illegible] seems [illegible]

Dear

I have sent you a statement of the Geogr. distrib. of species of Euphorbia in our Flora & here add a more complete and elaborate table. It may be added in its proper place that the perennial Euhes of New Mexico and Arizona are not well cleared up, and that there may be some confusion yet, while the annual ones seem to be very distinctly marked.

I do not know but some of the statistical data in this table may clash with data sent a week ago; if so the former (table) are more reliable.

I do not know exactly the distribution of some of our common species; perhaps you know better. Thus I have excluded from the Rocky Mountain Flora

E. serpens, E. maculata & E. corollata and from the Pacific Flora these same species and E. dentata, crediting to the former.

E. Preslii, E. serpyllifolia, E. dentata
E. heterophylla and E. dictyosperma.

and to the latter

E. Preslii E. serpyllifolia, E. heterophylla and E. dictyosperma.

Those underscored I have seen myself. What do you know about them?

St Louis June 1st 1862

Dear Doctor

Here I send you the volume of my notes. You have to print them unabridged, but I suppose revised and corrected if necessary. As it will be a year before we can get more information it would not do to hold back.

I have a part of Parry's California Pines at present in my hands — flowers of P. Lambertiana among them. Let me have flowering sp. of Strobus and all your other Pines such are handy — We get them so seldom in the herbaria and I suspect that better characters can be drawn from them — perhaps — together with the fruit, also better sectional characters. Those of the acute Endlicher are worthless.

Those confusions made by DC Candolle have occasioned me much trouble and expense, and I have troubled Parry too — hunting for those pamphlets, which I thought lost in the Custom house — My bill was $9.60 I miss also among my returned oaks all my Texan mountain specimens, also all my Mexican specimens (Gregg & Wislizeni) May they be among yours?

DC has united: mountain Castanea and pinnides or pumila, also Lithocarpus & Quercus very properly I think. Q. Wislizeni from California I would take to be Q. agrifolia var.

Yes, sundry, that you have for me —

popularity, or Bates Missouri in 1860 — And I tell you now that you and all of you do not know and appreciate the worst, but will by and by feel its weight.

There, I began my "nothing" and have said more than I wanted.

I send plates which I just receive, soon the text.

I copy a memorandum about Yucca made a year ago. My material is too scant to do more at present, nor can I class the old species Y. gloriosa etc etc. Kunth is worthless here

Yours truly

G. Engelmann

116 (Fung) Q. Minnesotensis Mx
117 Q. acetinervis "Wislizeni" mountain
[illegible] with [illegible] Cuyamaca Cal.
[illegible] Cuba [illegible]

keeping a pigeonhole for me. I want to attack Pines thoroughly. Any material will be welcome. I have flowering specimens of next to none except C. solidaginis; possibly cinitata Lamentiana

Just got your Buckley paper! Would it not be best to ignore it henceforth entirely kill his names by silence and punish him in that way? — If I recollect right this Phlox Roemeriana I made out on account of numerous ovules to be no Phlox but a Gilia. I am afraid Durand, in the best meaning and intention, discouraged Buckley. — Dr Shumard on his return from the Texas Geol Survey gave me the same account of Buckley as a mean ungrateful scamp! I thought there might have been personal feelings, but this recent business confirms the judgement. B. would not send me plants because I intended to appropriate to myself "the labors of others"! This is simply ridiculous. —

How pleasant it must have been to you to meet with so many old friends in Buckleys masquerade party! — I see his grasses are now out to — you or Torrey have to demolish them too.

Yucca longifolia is like some other a name of mine, no doubt obtained from Lindheimer. — I have never published because I am not perfectly satisfied about the synonymy. Must have sent you Lindheimer seeds many years ago we haven't growing here. —

If you approve of restoring E. cornuta etc you just make the necessary alterations in my paper. —

Nothing about your sneerings at the old heathen "theme" we write" O. you Christians! "The country is to be kept" gleba! "Tut! it! "sacra auri fames" place for auri: glebae or terrae if you please — the people can go but the dirt we must keep! — As to your Teuton allies, you will find them very impracticable and have to choke them off too, which I expect will be done in time if you succeed. But you calculate without the west, the "great Northwest" they fight with you at present but will change front by and by. — Your remarks are interesting because they show to me the pervading familiarism of Yankeeland, which has attacked even the Germans, the mild, the peaceful even Germans, ~~The~~ has chosen (— there, is that not poetical?) ~~for~~ these things do not come out of you! — I have repeatedly given you correct information about affairs out here, for example when you thought Fremont would carry Missouri 1856 ~~by~~ personal

there — sends in it Astep. Onchystephana, & Euphorbia montana. nothing new.

The further botanical news. Have you got copies of Euphorb. for me from Allman and send one to Boissier. —

Yours very

J. Engelmann.

What is Asa Gray doing? His 3rd vol. is out since last year but his subscribers here have not got their copies yet. How is that? I suppose he does not continue it at present.

You have treated Buckley very cautiously, indeed. — Vincetoxicum longipilis is one of Lindheimer's, a name proposed by me 20 years ago — but I do not know its relations to the other species, so I would not publish anything about it. But I believe I sent you a note on Yucca.

Carlisle's division of Pinus is poor. I think the first and most important division is = Cembras 1, pseudostrobus 2, p. Banksiana. It remains to be seen, whether there are other characters to sustain this division, perhaps in the anthers — We will have to collect better specimens with 1 & 2 year old fol. on same stem etc., male flowers etc.

Gray.

Looking over my Lentibularieae I find what I take to be Utric. biflora, a sketch of which I made 29 years ago (copy included here) common here, in Illinois and lately sent by Hale from Minnesota under the name of U. minor. — I have not seen minor from U.S.; but ours is very different from any German minor and first erect. — I do not know well Utricularia. We have here what I take to be U. vulgaris and U. biflora. — Lindheimer also sent vulgaris from Texas, Hayden from the upper country.

Mimulus Jamesii Pollis Pilsi, Peoria Illinois

I am looking over Scrophul. I find Gerardia a difficult genus. What I had distributed as G. stricta n. sp. I find is G. aspera Dougl. (from here, northern Illinois and Kansas) but the character derived from the calyx teeth is very variable; so also in purpurea; in some eastern specimens (Wurzer) the teeth are fully as long as tube, in ours they are triangular and very short. — Besides the length of the pedicel (a poor character) there is the oval form and excision of fruit in aspera which seems to distinguish it best. — G. tenuifolia and G. Chaseae seem absolute be very close together, and calyx teeth variable.

We have here only one Dasystoma which is G. flava, I believe, but leaves mostly pinnatifid — often bipinnatifid! tube of calyx oblong linear as long as tube, flowers larger than in any other form. — Lindheimer gave

Houston 1842 & Gerardi, also primary or subbijunctifis, which must be G. Drummondii; a form of this with serrate or entire leaves I have from Red River. — Both the calyx teeth are ovate lanceolate, acute. — G. quinquefolii I have from Arkansas, not here near St Louis.

What is Lindheimer's Castilleia No. 669. and one of Wrightsons from Coahuila, which you had marked: not in Hb. B (Bentham!) What can it be?

I had sent to you the only specimens of Pentstemon 577. 578. 579 & Gerardia 574. What are they. His Pentstemon 576 is P. Fendleri & 581 P. barbatus but what is 575 & 580! 569

But I won't trouble you with these questions.

You say (Bot Bound. p. 112) "if Wrightsons 186 belongs here, from Coahuila, the corolla is blue" (P. stenophyllus).

Now I did not collect any Pentstemon at Coahuila but a scarlet, which I named P. coccineus (Hb Notes, 40. p. 107. which is probably P. barbatus — though distinguished by the almost naked stem few-flowered lax panicle, shorter lobes of lower lip. P. fendleri seems to be distinguished from P. torreyi by both lips being nearly equal and the lobes of lower lip ovate. P. torreyi: lower lip shorter than upper one, lobes lanceolate oblong.

Ellisia ~~that~~ ambigua I believe I have before mentioned that it is common here, also in Illinois and Wisconsin. The corolla is certainly contort (Wale) 5. angled, angles corresponding to middle-rib of lobes! Did you raise it from the seeds I sent you? — Who collects E. Nyctelea?

Fendl. 564 is certainly not Veronica Americana, it is more like V. Beccabunga, but has acutish capsules and linear lanceolate lobes of calyx like the latter. The capsules seem to distinguish it from both other named.

Fendl. 560 & 563 I suppose are the same, and perhaps = V. peregrina still with this semi-perennial habit, slightly different capsule & broad leaves — Both in DC Pr. seed minutely tuberculate which I do not find in this nor in the common peregrina while others e.g. V. agrestis have that very much.

What can a plant be, sent by Chapman as "Siphonostegia sp." Benth. — habit of Rhedcoma hispida. Too poor to examine — If you do know without referring to Herb etc — don't trouble yourself.

Do

St Louis June 9 1862

Dear Gray

Here a letter full of questions to pester you! — I expect to hear from you about those Guerrons, before I write to De Candolle.

Boissier sent me a package of plants returning also my union of Gregg's Euphorbias — which were sent with the Smithsonian box, I seems before. N York & Washington last year!

I have a letter from Parry from Denver (about 5000' elevation) — just arrived

Stowe Jan 16 1862

Dear Gray

Your letter and Package came Saturday; you ought to have waited till after 4 July. I sorry to have tax'd you, when you are so busy. — But your hurry made you make several mistakes! You sent me Chapman's Copy of the Russian work for Boissier! What can I do with it?

And you did not send several pamphlets which were for Dr F. Brendel, Peoria Ill. 1, sur le Liège 2, Usgit de Rotundifolia

You may send these by mail direct (tearing off the writing) or you may give them to Dr Baumgarten from here, who left here a few days ago for Boston, and to whom I gave a card for Agassiz, Wyman and you. —

If he has not yet called on you you may, if you can, give him also a specimen or two of Pinus Cembra with last years and this years young cones attached — the same of Pinus Strobus. If such specimens can not be found I would like to get specimens with both stages of developement of Cones.

Or could it be that Stubbs has annual fruit ?? Cambria does not seem to have.

Dr Baumgarten goes to Boston to meet my young friend, his son, surgeon in the Navy, just arrived there. Both are, though no botanists, active and scientifically inclined men. Dr B. in particular has done something in microscopy & zoology.

Buckley is a scamp, no doubt, but whether secessionist or not, has assuredly nothing to do with it. You know how many, many scamps and scoundrels are on your side and how many honest & noble men on the other !!

Patriotism and Christianity are certainly not incompatible but question: is that patriotism which you (as I think) mistake for it ?

But enough, between Patriotic indignation, night watches and excessively hot weather I find no time to do any thing. I have not finished my Ulva for our Trans. as I hoped.

Parry writes from Denver (elevation 5160 feet above Gulf) seeds & flowers of Echinocystis Simpsonii is going right away to the Utes.

Yours Truly

G Engelmann

St Louis June 23 1862

Dear Gray

Studying the Cactus fruit. I found it necessary to examine also Ribes fruit, and was astonished to see that so far as I could ascertain, namely a botanist has paid sufficient attention to this most common berry!. The fact is that the pulp is formed 1, by an incomplete, partial arillus, larger in Gooseberries, smaller in Currants and 2, by the epidermis of the testa which consists of a single layer of hexangular cells, which are flat in the ovulum increase in size as the seed grows and become at last prismatic perpendicular on the seed. These separate

at perfect maturity in some species (probably not in all) and thus stripping the seed of its epidermis, leave the funiculus free! This is the final liberation of the funiculus naturally explained! — It is not free until the cells of the epidermis disintegrate, — Your figure in "Lessons" has to be corrected therefore.

These examinations have led me to a study of the species, which were always obscure to me.

Ribes hirtellum which I have from

Wisconsin is cultivated here as the gooseberry of the gardens, in preference to the English gooseberry (R. Grossularia) which does not do well here; I never found it wild. I have it from German Gardens as "R. triflorum". — Our wild gooseberry is what I always have taken for R. Missouriense but is probably not different at all from the more hairy and smaller leaved R. rotundifolium. — Very vigorous shoots of R. Missouriense are very hispid. It is common here wild and cultivated. Besides this we have only R. floridum here. —

R. irriguum Douglas (Jeanl.) is in the flower not distinct at all from R. hirtellum; probably only a form, with hairy calyx etc.

I am very scant in the species of Ribes. Of those of your Flora I have not R. prostratum & R. Lacustre, & Cynosbati I have only in fruit (for Niagara).

Another letter from Parry, and a new discovery from North America!

Asplenium septentrionale.

He also sends fresh specimens of Gentiana humilis; the flowers are white, limb spreading, lobes with green midribs, spotted at base — nothing else new. Writes that his partner wants to gain money more than science, plenty of specimens without attention to their novelty or interest — P. expects to climb Pikes Peak with a Party from Denver on July 4th. The Barometer will come into play there! P. is getting quite expert with it. —

Vale —

Yours ever

J. Engelmann

Albany July 7 1862

Dear Gray

Just get yours of July 1st. Mind that I have not seen the disintegration of epidermis cells of Ribes seed, but suppose that they finally do — as all the figures, yours included show nothing of it, but the funicle free. — Or are the figures taken from dry and soaked specimens, where the epidermis is destroyed mechanically? I shall watch this, will publish in our Transactions, just publishing also extract of my notes on Nelumbium, which I see Trécul has all wrong and Brongniart of Rosia (in Illin Agricult. Rep) not right.

I had overlooked Aspl. septent in the Boundary Report.

Dr Parry is again among the Pines of the Rocky Mountains and has now ascertained that the female ament of Pinus flexilis is erect [as it is also in P. Strobus, while in others, e.g. P. sylvestris it is recurved ab initio] that in the second year the growing cones are pushed aside and assume an oblique position on the slender branches, but are never really pendulous. There can remain no doubt that the pine in question is the original P. flexilis of Dr James.

G.E.

Things Chapman's Copy also! I have two copies now

Ever yours

G E

I have on the other page a footnote to my remarks of Dany's Ribes & Pillman; if you get the Revise add it, that will then settle the point. —

You will have received a letter from Dr Shumard, former State Geologist of Texas, now practising medicine here, about Buckley — he has known him as a mean swamp there. —

I have Elisia Nyctilea from Europe bot. Gardens. It is certainly distinct from S. ambigua, but scarcely by the inflorescence. The ~~flowers~~ corolla is quite different, which I have pointed out to you a year or two ago. —

Dr B. has arrived here, highly satisfied with his eastern trip.

Slips have safely arrived thanks!

The pulpy epidermis of Ribes seed is organographically no doubt the

(Note: ~~[illegible] Dr Darby~~ is a ~~[illegible]~~ la

same as the dry sac of many Sax. fragaceae seeds! Allied families!

Regel's pamphlets have arrived thanks — you have many exp[illegible] which you better change!

But about that box you are not quite correct yet! You had sent my the asiatic travels from Boissier formerly long ago — and now with Dr Gibbes

St Louis July 14th 1862

Dear Gray

Yours of July 9th just in hand.

329 Euphorbia hexagona Nutt
330 E. petaloidea Eng.

Another letter of Parry's with Saxifraga Jamesii was allied sp. with obtuse petals on long claws different from the figure of Hooker's Fl Bor Am. He was on the point of climbing Pikes Peak. His companions seem to be timid men, whom he finds it difficult to get away from the beaten track.

Poor Bourgeau just has been ordered on a gunboat in the lower Mississippi — a terrible place at this season.

Nothing new in Science with me

Ever yours

J Engelm

over

Parry used regular Barom. Obs.
from several, made at the top
of "Mount Guyot" between
South & Middle Parks I ~~made~~
calculate the elevation above
the sea at abt 13250 feet.
Denver is make 5160

I see that Torrey describes his
Saxifraga ~~with~~ petalis orbiculatis
longe unguiculatis — it is therefore
Parry's plant, but Hooker's
is different.

St Louis Sept 12 1862

My dear Gray

Thanks for your notes about Pentstemon. — Otophylla Drummondii and Pentstemon glaucus were in your specimens of Fendlers which I do not possess. You must also have retained all of O. stenopsylla of Wislizenus, of which I have nothing but a memorandum, thus "186 Chilopsis ?"

What is the Pentstemon Lindheimer No 49 from Nierdenales June 1847 ?

You wrote about Gerardia — but I find no memorandum.

For Castilleia I shall look them in Proc. Am Acad.

I include fragments of what I take to be forms of P. antiquus. Is P. laevigatus different ?

I have seen in Hort Bot. Mexico Cestis augustifolia. Strong lemon-peel fragrance, as Thurber already states. Whatever characters separate Bidis from Dysodia etc, can not be but artificial, I mean to say whatever places them in widely distinct sections.

I have been very busy practising medicine, not done much in Botany.

that the radical leaves are cordate ??
He also and Parnassia parviflora. —

I ascribed your long silence to a voyage of recreation — the vacations, but you really did owe me a letter, my last one being dated July 7th and your last July 1st.

Torrey has not answered 3 of my letters ! I hope he will send me Parry's.

You know that Parry intends to collect baskets of Pine seed — hope he will be able to dispose of them to advantage. You must help him. — I hope he will not be molested by the Indians, who now are getting hostile every where — making the poor settlers and emigrants pay for the rascality of agents etc. The demoralization of this people is astounding and the war will make it worse. — Pope is a very fair representative — I was known as such here long since. — So you want and the war ! We diverge here diametrically — "Let us part in friendship" said your J. Q. Adams and so say I — I don't mean you & me !

Well, good bye write soon.

Ever yours

G Engelmann

I examine here and have some plants arrange some genera in my herb. continue to study Cactaceae. Have got at Yucca, where a great deal must be done yet, but the material I have is so scanty and so confused — very few species yet to bloom here. I only see Y. filamentosa and aloefolia.

I suppose it is too late to add to Parry's notes about Pinus (Coll. Journ) the remark, that the seeds of P. flexilis are large and edible, and are distinguished from those of any other of our Pines by a persistent sharp keel, representing the wing of other species. —

Next year you must get me male flowers of Cercocarpus and Strobilus & rigida (sylvestris and austriaca I have) also aristata and flexilis (none other).

I hope Torrey will send me Parry's Pikes Peak ascension. — I have calculated other of his barometric observations and find the highest peaks all a little over 14,000 and the limit of trees at the unusual elevation of 11500–12000 feet — which can only — in that latitude — be explained by the great elevation of the whole country, which tends to diminish the effects of higher altitudes on climate as it does on the landscape. The base of the mountains and many towns in the mountains are 6–7000 feet high and one, called Empire City, I make as much as 8700 feet — and the ("deserted") town of Saxyall 9900 feet. — Single habitations reach over 11,000 feet high — almost tropical features!

I suppose you will send my Euphorbia "talk" as you call it to pretty much the same persons I would, if you send me only a smaller number, say 20.

I have re-examined Euphorbia barbatus in Hort Shaw — habit different from my German specimen, more like Torreyi — differences of these really very small — though proportion of upper & lower lip remains the same in Europe, Shaw's sp. and diff. from Torreyi. — Parry sent in a letter the flowers of the Cactus, remarking

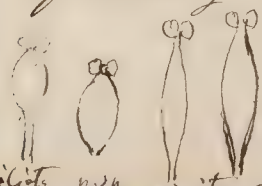
Utica Sept 29 1862

Dear Gray

I just get a letter from Vasey with a new Gentiana, which I just have time to describe to publish, but want your opinion.

Crossopetalum, allied to ~~crinita~~ ciliata, perennial, flowers sessile between the upper pair of leaves — corolla divided 2/3 — stem low, leaves few, linear, seeds as in detonsa. — Differs from all others ~~together~~ allied ones by the low stem, sessile flowers deeply parted corolla and from ciliata by the sessile ovary and scaly seed (= crinita)

I review G. crinita & detonsa and can distinguish them only by the broad base of the leaves ~~[illegible]~~ and the stronger ciliation of the former, — no difference in style, stipe or shape of ovary of any essential importance



neither your nor Griseb's characters satisfy me. (but might not the European

and our northern & Rocky mts Victoria be different — I have not material enough to decide — I have in mind the Niagara & Wisconsin Delouse, also upper Missouri (Woodhat).

I get a letter from Carlstow about Pices; he wants mine for Dt Prod. — my Cephalopoda, sent to Rossier, have been lost by the Smithsonian between N York & Washington 15 months ago. —

Ever Yours

J Leidy

Got Torrey's letter for Vikes Veak, with his & your corrections — You might have altered Yucca filamentosa also which must be Y. angustifolia! Every thing else right, I suppose.

Stowe Octo 1st 1862

Dear Gray,

By yesterday's mails I get proofs positive, from the east and from the west, that the petals of the Scientia amabilis are not entirely without thorns and that heartburnings and quarrelings are not entirely excluded by the love of flowers!

You send me a dash at Buckley which is almost as severe and as well applied as Stuart's on McClellan's ~~[illegible]~~ my friend Pope's rear! What a change from the time when you established the Buckleyan! What the mean uses he made of Dumb Confidence and Natural Folly even more than his ignorance and presumption — beating in all these his predecessor Scheele — deserve the castigation. He is "played out" I suppose.

And from the West comes this

big parcel from Parry addressed for you, but sent to me to read. Although fortunately, I am not asked to sit in judgement, that is left to you alone! And a disagreeable business it is! I suppose formally and legally the other party are right and are disposed to insist on their "pound of flesh". While morally and justly Parry is right. You will probably get letters from Hall & Co and be informed of their views. A compromise is of course advisable as, if Parry refuses, such the other may even go to law, and have law on their side. Parry must make the best of a bad bargain, and learn to avoid "entangling alliance" for the future. That poor Parry is accused of idolatrous is too bad, but I will not swear that he may not have lost his temper and have said "some hard things".

Thanks for the 2d part of Parry and for the Euphorb; a few errors see next page.

I hope to see the Appendices soon

Ever truly yours

J. Lindenberg

N. Parry. p. 30. l. 2 627 for 626

L. Fraxna speciosa pag 31 you have probably stricken out the character of parallel veined or nerved radical leaves ~~of~~ in contradistinction to the feather veined leaves of F. Caroliniana.

Your notes on Orchids are very interesting.

Euphorbia p. 288. l. 2 from below. insert first before division

p. 290. l. 5. for edentata read E. dentata

l. 20 before allied insert one — strike out the before Chilian.

I happened to get a small roll of Plants from S.W. Missouri, made by a surveyor or geologist, attached to the Missouri Survey. Nothing peculiar but the green velvety Delphinium azureum and my Corydalis crystallina; as I think you have no specimen I have begged one for you, while you find here among Parry's

St Louis Oct 8 1862

Dear Gray

Just got yours of Oct. 2 and a newspaper from Parry with a branch of an Abies which he names A. Douglasii. — There seems to be confusion and we must try to clear up. You can help me somewhat by informing me about the following points.

1 Is the position of the cones in Michaux Sylva of A. alba and A. nigra correct? Or may not the Artist have attached loose cones to the branches after the manner of A. excelsa

2 Are the cones of A. nigra, as it grows right before your house and all over that region, pendulous at the end of branches, or are they not rather (as I find them in sickly specimens here and in very good eastern ones in my Herbarium) nodding (recurved) from short (¼–1 inch long) lateral peduncles or branchlets. —

3 Are the cones of your Canadian A. alba growing like the last or like A. excelsa.

A Menziesii has the cones at the end of short branches, pendulous with the branch and straight with the same axis, while even the young cones of A. nigra (also in A. Alba) here are on short recurved peduncles, or with lateral branchlets

These questions will not give you much trouble to answer — I think they have some diagnostic importance.

Many thanks to Mr. Gray for the drawing of G. centiflora. I had overlooked Hooker's original figure in Shaw's roll. — It can not be confounded with my plant, which may be described as a ~~t-flowered~~ single G. detonsa with sessile flower, deeply slit corolla, sessile oval ovary and ? perennial root.

Parry's Partner, Hall, was here yesterday passing through to his home near Springfield Ill. — He does not seem to have received Parry's last letter of which you have a copy. Without informing him of my knowledge of all the documents, I told him that I had heard of the difficulty in general and that Parry proposed you as umpire, to which he did not object; I told him to write to you and submit a statement upon which he informed me that he expected a letter from you, when he reached home.

He is a rather rough looking customer but talks fair enough, thinks Parry is very excitable and rather lazy.

Dr Shumard thinks nothing you can say about Buckley too harsh or even harsh enough. He detests him as a mean scoundrel.

That play in the lower left hand corner of your letter does more credit to your patriotism as you — out there understand it, than to your artistic accomplishments. How do you like the hermit? Yes, your men Andrews, Sumner, Wilson, Nicolay and his Book and not to forget Train? I like ~~that~~ your own Vice Parker make, i.e. — I have in our papers repeatedly read speeches or papers by the latter — and been greatly interested in them.

Yours truly yours

G Engelmann

You send me a cut from a Newspaper about the emancipation legislature of Missouri — Reminding that I am not at all opposed to emancipation in a proper way, so that both races are benefitted but not injured and destroyed as the "Proclamation", if effective, would — You ought to know that about ½ of the voters of Missouri did vote, ¼ absent south, ¼ did not try to vote at all or was prevented by bayonets from voting; of the voting half about the half (¼ of the whole) did, as it seems, vote for the emancip. candidate, — well we will soon see the wisdom developed — hope we may see real wisdom! fear, we shall not!

Ever yours

J Engelmann

Look close to all your Rocky Mountain specimens of Spruces. By the way, is Spruce or Fir the correct English for such as A. alba and such is A. balsamea. It seems to be a confusion with terms just as in Latin.

Wright 1710 a low plant, a few inches high, is, I suppose Abronia mellifera

1711 must be A. fragrans, but has broad triangular wings different from Dr Berkwith figure and from Torrey's description; fruit of same form as in 1710 but much larger. Other specimens of A. fragrans (Wislizen) have the narrow wings as figured — therefore Wings variable! — further examination of Fendler & Hayden's specimens show the wings also triangular and in one of Hayden's the involucre much smaller. Are these intermediate forms? Wislizen however says distinctly of the lower, smaller fruited A. mellifera: "flowers red, sweetscented".

St Louis Dec 19 1862

My dear Doctor

Thanks for yours of Nov 21 and for your kind efforts in my favor for Abies etc. — I have written to Prof Brunet. — Parry has sent me very full specimens of his new Abies which certainly is variable enough in leaves position of cones and shape of scales — but seems sufficiently well distinguished from A. nigra and A. Mengiesii and also from A. alba. You have yet Parry's specimens and also a cone which I sent you a year ago of Hayden's collecting for Haydens specimens also belong here! Query? Does A. alba really occur on the Rocky Mountains? Are your specimens from there identical with the Canadian ones? Cones narrow, cylindrical, scales with even edges! — I made a big blunder by calling in N. Parry the margin of the scales of A. alba thickened. Hooker in Fl. Bor Am.

already very correctly characterizes the scales of A. alba as thin and those of A. nigra as thick — even those of the small Wisgam form are remarkably thick at base. The ~~scales of~~ cones of A. Engelmanni are cylindric or oblong-cylindric (not ovate conic like A. nigra) scales thin, emarginate or crenate. They ~~are on leaf~~ at the end of leafy branches in higher alpine localities, partly sessile, partly terminal, or entirely lateral and sessile in young trees in the lower regions.

Did you obtain Sporles ~~from~~ the localities in the White Mountains, I gave you? That is Parry's No 70, committed in your account — in your MS notes you called it Crepis occidentalis Nutt.

In an account of manners of German settlers in Texas (which — if true — is horrid) which I find in a German New York paper I find the first notice of our good friend Lindheimer, since the war begun, I never heard from him, so that even that by no means gentle or flattering allusion to him was welcome — I hope he will soon clear up those perversions for us — I long to write to him! — That rabid "red" (and black, of course) republican paper, the N.Y. Abendzeitung says that (only) the Germans in and about New-Braunfels "seduced by that miserable scoundrel Lindheimer" are fighting for the South.

Now, my old friend Lindheimer, whom I have known intimately for more than 40 years is as poor, (poor because honest) honest, earnest as any man can be, without guile as any young child can be — amiable if there is any man. If he does any wrong it is because he honestly believes it right! — His love of liberty not only political but also social is such so extravagant that it drove him away from a pleasant home in Germany and then to the wilds of Texas. — But he has that great and pure love of liberty, which does unto others as it wishes to have others do to it: he vindicates the liberty of all and therefore objects to the and is the greatest enemy of the fanatical red republicans who want to make others happy on their own Procrustes-bed; force happiness as they understand it on their unwilling neighbors. — Hinc illae irae — of longer standing than this war.

I have studied Long's & Pike's Expeditions to that Peak — and find that their data regarding the elevation of the Peak are very nearly correct — the great differences arising from the different assumption of the altitude of their base. Pike assuming it too high, 8000, Long too low, 2000 feet while it is 5-6000. Jacus confounded Pinus flexilis & aristata he evidently describes the cones of aristata with the seed of flexilis and the tree also is flexilis. —

open again to

I inclose a leaf of a "Tupelo" gathered (without fruit) by my brother in the swamps near the mouth of the Ohio — with Taxodium, wood and especially root — spongy — base of tree 3 times as thick as stem etc — used to buy up fisheries, & rock etc. It can not possibly be the true Tupelo, Nyssa uniflora — but does not seem to be N. multiflora, which is also common down there, under the name of "Black Gum"

St Louis: Jan 6 1863

My dear Gray

My best wishes for you and Mrs Gray for this new year — my best wishes and hopes for the country — for peace at any cost — You know I have been a peace man from the first almost as much as any Quaker whom, I hope, you Yankees won't hang in these enlightened days.

I continue to be after the Coniferæ: I find in all the works I could consult no clue as to the true nature of the seed of Coniferæ. What is the wing? is it the empty part of the ovulum, not filled with the nucleus — or is it a ~~thickness~~ layer of the scale, from under which (the ovulum and between sack and the mass of the scale) is developed and protrudes. — What takes the place of the funiculus and where do the spiral vessels enter the ovulum? I must examine the development microscopically next spring. Meantime I have examined a good many seeds

and find the following pretty characters in the sections of the old genus Pinus. I am anxious to examine the male flower, and suspect that if one is separated all must be distinguished as genera.

I must premise that I call the upper side of the seed that which is free, the lower side that which is attached to the supporting scale.

Seeds of Abietinae

I Membrane of the wing covering the entire upper side of the seed, more or less folded over the edges.

1, firmly adhering to the seed, connate with it

a, Embryo curved: Cedrus

b. Embryo straight: Larix, Tsuga

2. detached from the seed at maturity

a, but firmly enclosing it by the edges considerably overlapping. Abies

b, permitting the seed to drop out. Picea

Testa with large receptacles of resin

II Branches of wing covering the edges of the seed only, detached at maturity. Pinus

Testa without such receptacles

* Abies (Tsuga) Douglasii is destitute of these receptacles.

Among Hall's plants I find Pleuroyyne rotata, but remark that, 1, the ovules cover the whole inner surface of the ovarian cavity, and 2, the structure of the corolla is certainly = Swertia; 2 (nectarial) gland at the base of the segments are surrounded by a petaloid funnel, with fringed edges. — It is only the curious lateral stigma which separates it from Swertia.

I send you a plate of Gentiana bicollata.

Give me, if you can, an exposition of the structure of the seed of Abietinae and especially the wing! What is it morphologically?

Ever yours

J. Engelmann

Over

Illinois Jan 21 1863

My dear Gray

I just get your letter with the Gentian and answer it at once — I also get your determination of part of Hall's plants — I had written the other page some days ago — I see that you have otherwise disposed of Saxifrag 198, but coincide with me about the true S. cernua = 195. —

I admire your activity — You have disposed rapidly of this collection! and put me to shame out and out but we have a sickly winter really for Diphtheria (Mrs George had a short but quite severe attack) Smallpox very prevalent (war!!) and I have not been able to finish my mss for Illinois Transactions! I often do nothing = botany for several days — and then only in broken half hours! —

I will take the Beech & Hook — and will try to get Shaw to take a Copy — Keep things with you for a while yet —

Have got the big lot Parrel with any Greggian Euphorbias etc etc!!

Have done nothing yet with Portatore But I get Roettler to make full drawings of my new Wisconsin Pines and also a Engelmann before I shall send off any material — So that if lost,

S. rivularis var. fide Gray

Saxifraga debilis n. sp. Parry 167. Hall & Harb. 198.

Distinguished from S. cernua by the much smaller flowers, more slender stem, absence of bulbilli and especially by the adnate calyx.

Hall 195 seems to be the true S. cernua but my specimen is very incomplete.

Primula decalbata n. sp. Hall & Harb. 378. flores capitati subsessiles; calyx cylindricus elongatus tubum corollae aequans. allied to P. farinosa, Sibirica, magellanica & decipiens — but the cylindric subsessile calyx distinguishes it from all of them.

Polemonium spinosum n. sp. Hall 451. — Closely allied to P. pulcherrimum. Spinis congestis, sepiis fere verticillatis, corolla longiore

Distinguished by the persistent petioles, and the much longer corolla. NB. From Bentham's descr. I could not have recognized the Polemon but follow your names in Pl. Parry, and you, I suppose, follow Hooker's figure or original specimens.

464. Carex arcuata Boyr. var α. pentagona, forma calyce minore Eng. Carex. p. 495.

466 Physalis lobata Torr! good! Seed very peculiar — purple corolla.
= Fendler 677

Fendler 680. Ph. pubescens
678 — — macrosperma
679 Ph viscosa parvifolia?
681 Ph. viscosa lanceolata.
682 — — — var
683 — — — var

209 Rugelia nemorosa Torr Is it a good species?

468 & 9 both I believe G. affinis

470 G. Parryi! I am glad to get the true G. calycosa from you, 1-flowered, fl. without the boatshaped bracts, calyx by large broad foliaceous, folds many lobed certainly distinct.

471 G. detonsa = G. corniculata var

473 G. tenuis Gr mixed with fragments of G. acuta

474 G. humilis

475 G. prostrata var

477 Plemuogyne rotata Gr.! but with the exception of the curious lateral stigma a Swertia, corolla as well described by Griseb. — there are 2 glands at the base of segments, with a petaloid fringed funnel surrounding each, but I believe I have reported about that.

478. Asclepias involucrata Eng

480 A. Nuttalliana Torr foliis angustissimis umbellis glabenimis

508 Euphorbia marginata

509 E. montana Eng.

510 E. dictyosperma T & H

511 E. hexagona Nutt

512 E. peltaboides Eng and in my set the small flowered form, named by Boissier E. polygalada

513 Euphorbia Fendleri Torr & Gr. the incapsed — isolate form.

528 Pinus ponderosa Dougl

529 P. flexilis James

530. P. aristata Eng

531 P. contorta Dougl

532 P. edulis Eng

533. Abies Mengiesii fine fl. with half a cone of A. Lasiocarpa Parry in my set

534 A. Douglasii

574 Arctostaphylos cataphylloides Eng (the same as A. Americana Nutt?)

576 Chrysosplen alternifolium

691 Cheilanthes Fendleri Hook

693 Gymnogramme Fendleri Mettenius

and which of Hookers in H. Bor Jour or whether all his Colorado have I have now no time to examine.

St Louis Jan 29 1863

My dear Gray

I wont retort, and say "old Yank" But I take your address to me "old scrub" in only because it is coupled with "Dear"

I believe I have above and before given you all the names you desire. I may look over Arcuthobium yet

Thanks for the Pine fragments. Of Abies amabilis, this is new to me I should like to have seeds & scales. It has the legitimate acute leaves — and the sp. of Abies grandis the marginal leaves, adscribed out long (Hayden send specimens with rounded or even acutish leaves.

Pinus monticola was also entirely new to me. I take it (from this fragment) to be distinct from Sabines — leaves coarser, more strongly serrate and obtuse. —

Please send any thing you have for me to

Ferdinand Reuss Esq
Care of Marcuse & Baltzer
Bankers
New York

by February 15th

If would perhaps better send to Thurber or some one else, to leave it at the above place — or send direct there by Express — paying freight and charging me with it. —

I employ Roeller (who suffers from the hard times so that he threatened to go in the country and plant potatoes for his large family) to make me nice drawings of the British Pines & Cupressineae — might add P. flexilis (which is my fave) and thought to offer the plates to Smithsonian

My first object was to secure good drawings, if I should send the Originals to Carlstore or they be lost. — I think I will send him

All I have of them, and give him my notes. What say you? I see that Dr Lalatore has also engaged the Abbé in Quebec in his services.

Nothing new in Science here with me.

The other day I got a good job for Lettier. Col. Graham in the Lake Survey was here on the McKenzie Court, and Dr Bigelow with him, and had different diagrams to make, I recommended Lettier and got him them nearly $100, which he needs very much. —

Ever yours

J Engelmann

Abies, fir, Tsuga, A. pectinata, Hemlock. — Picea, Spruce, Fichte, Picea, Fichte, Picea, Spruce

If you separate Abies & Picea I think you must consistently separate all the 6 genera mentioned by me — with the exception perhaps of Tsuga which may remain with Picea

You must leave Linnaeus, Flanders, and not follow him. Picea is the Fix, pitch tree, the Norway Spruce; Abies the fir — Walter has „spruce-fir"!

Parry's Polygonum from Berthoud's Pass (small annual) seems to me P. coarctatum on β Ochrea hyaline, 3 nerv. 3 fid. lacin. linear carol. aciculiat. P. dim. 1–2. 8 stam. 3 stigm. alg. 1½ lin. long, 2 int. sepals carinate [illegible] fruit 492 in my ed. is P. tenue [illegible] a larger better specimen of the same as Parry's species

No! tell is rubbish! throwing all the forms together! I think they may be arranged as follows.

492 Polyg. tenue

α. commune, majus ~~numerius~~ ~~numerius~~ majoribus (1½ lines long)

β. microspermum, minus, gracilius, ~~numerius~~ minoribus (¾–1 lines long or less)

γ. latifolium, humile, folia ~~oblongis~~ ~~obtusis~~ spicis coarctatis, ovatis, superioribus (aristis destitutis), nutiis

Meisn. DC. Prod 14. 100 is wrong in saying that the nuts are subopaque or rough on the edges — they are perfectly smooth and shining, with concave sides and an aciculation

493 P. polygonoides Meisn. a pretty species nuts ¾ lin long, very rough.

575 Quercus Douglasii var Mexicana = Fendl. N Mex. 809 & 810. ABC

I believe I have sent you already all the other names, you want. The Arabis-Erium 574 is A. campylopodium Lec. the same as Parry's — on Pinus contorta whether it is the same as Lindheimer's N. Mexican

Saloni Febr 9 1863

Dear Gray

In regard to Bromelia I have no doubt you are right, I have in vain examined the diagnoses of DC and to distinguish P. pinnosa, sativa, magellanica etc — trifling differences.

Right again in Asclepias Curtisiphanes which by mistake I labeled A. involucrata though both are very Wilkesian species! Hallii plant — also collected by Gordon — has broader (not always opposite) leaves and is less pubescent than the southern plant of Wilkes and Gray. umbells sessile, few flowered crowded towards the top of ascending stem — with southern, umbells lateral, commonly pedunculed, stems erect.

Thanks for the information in regard to Blennosperm I have no means of verifying.

The difficult point is Spatularia acuta. I have revised my whole material and come almost to the conclusions that both species acuta & tenuis are not distinguishable!

Calyx 4 & 5 parted in both; (your Lower Canada G. acuta has 4 parted flowers) shorter than, flowerstalks or equal to it in both; — lobes unequal mostly, almost equal in your Lower Canada specimen.

Corolla larger in the darker blue species of Parry & ~~Hayden~~ Hall and seed larger = G. Amarella

Other species from Illinois

Specimens here are in your herb. that he has seen in Illinois and by whom collected?

or rather to clear up your ideas about the "good Teutons" of which formerly you spoke, as a proper element to settle the devastated South together with Yankees I might cut out slips of German papers here full of the blood reddest Republicanism — destruction against every and any thing — commencing, of course, with Lincoln! The Army has now the power, therefore, we, the people (we are always — the people and the people is always right) ought and will clear of all the old rubbish and construct the world anew! But you see — what I always told you — that the men of 1848, which, when they were in Europe, you judged so correctly, are only following out their corrupt or mad schemes here in which they failed there. — But they want and can't succeed their brains fools that they are — but dangerous fools who may do a world of mischief yet tools in the hands of ambitious and unscrupulous politicians — 2 years ago in Iowa, one year ago in Fremont, now and now used the political aspirants of smaller Calibre in our state!

But enough

Ever yours

J Engelmann

& seed

Corolla smaller in Hall's pale yellowish – Clue plant – in your Carlton house & Lower Canada specimen and in all which I take to be G. tenuis still smaller.

beard large in all larger-flowered forms, smaller and evanescent in the small flowered ones.

Glands none in what I take to be acuta more or less indistinct in the forms I name tenuis

I have seen

G. acuta 1. your lower Canada fragment: flower small, 4 parted, calyx shorter than tube, and small, $\frac{1}{4}$ line or less (about equal)

2, your Carlton House fragment; flower small 5 parted, calyx much shorter than tube, unequal, seed = last.

3 Hall's pale flowered, strict specimen, fl. small, 5 rarely 4 parted, calyx shorter than tube unequal lobes, seed = last. flowers yellowish, tips of petals blue

4, Perry's specs. of last year, and some of Hall's – the latter only a few inches high – alpine, no doubt (similar to alpine forms of G. gemina) darker blue, larger, large calyx 5 parted, very unequal – seed much larger, over $\frac{1}{3}$ line

G. tenuis All forms are small flowered and pale with strict branches, seeds small, like 1 & 2 & 3. habit much like 3. – I have

5. Geyer in Nicollet, called by Torrey in Bot. Mex. G. propinqua. This is more like Grisebach's figure than any other; fl. 4 & 5 parts

6. Hayden – specimens of last year, but still easily recognized, very few fibres in throat: fl. 4 parts

7. H. Engelmann. fine specimens, but of looser habit – fl. 5 parts.

Glands in all of these more or less indistinct, lobes of corolla shorter than in acuta, broadly ovate not oblong as in that species – beard very slight in Hayden's, a little more in Geyer's and more still in my brother's specimen.

No 3 I must consider as a transition form. Have you both forms of Hall's?

I send you a few fragments; shall send by some better opportunity specimens of my brother's and Hayden's

I can not help inclosing you a slip of to day's paper – Train not permitted to lecture here! It is not a place enough for our Yankee atmosphere, where our disinterested Legislature which has been praised up so in eastern papers (about a dozen members are elected by less than 50 and one by a single vote – not majority, but vote!) is quarrelling since 5 or 6 weeks about the Senatorships – i.e. the Repubs – emancipationists – abolitionists among themselves. – Train was to lecture Saturday night but Gov Curtis hurried him off! –

Two Missionaries fell in a fight in this state, a few weeks ago – one a former Mayor of the City, the other a lawyer, one a Col the other Brig. Gen – The bodies were permitted to be brought here – but before the appointed time for burial the Provost Marshal hurried them under ground!

And to give you a good treat –

St Louis Febr 12 1883

Dear Gray

Can you send me a small branch with male flowers of Abies Canadensis? Thanks to Parry I have those of A. Douglas. I am anxious to see whether A.C. in the structure of the anthers approaches to Abies or to Picea.

Of the true Abies I have only those of A. grandis (?) gathered also by Parry; those of A. pectinata and A. balsamea would also be very acceptable.

Brunet has written repeatedly. I was pleased to find him jealous and not a little tickled to observe, how he becomes puzzled, when he begins to investigate those species which at first seemed to him so plain.

I had almost forgot to say that I badly wanted to propose to you:

1 Gentiana Amarella 4 parts } Amarella
2 Gentiana acuta of Parry 5 ..... } Amarella
1861
3 Gentiana acuta Camden 4 — } Amarella
4 G. — — Carlton house 5 } Amarella
Hell & Hirsch 4-5
5 G. — tenuis Hughes 5 part } Amarella
6 G. tenuis Gribben 4 part } Amarella
7 G. tenuis Hayden 4-5 } Amarella
8 — — Nicollet 4-5 } Amarella
9 — — } Amarella

I do not see why 2 should not be considered a form of G. Amarella. 3.4.5. may stand as acuta, which I would consider as subspecies of Amarella.

6 is a transition form.
7.8.9. may be tenuis, very slightly distinct from acuta.

Durand's Herb. G. tenuis (Grisb. DC Prod.) with 5 parts fl. & without glands may be = No 5

If you separate, as you do, Mex. Abies & Picea & Larix, Cedrus, must follow, and necessarily Abies & Picea must be separated, but whether Pseudotsuga intermediate between the two ought to be united with either or must be also made a distinct genus, I have to find out yet. And I want to do that before I write to Parlatore. I shall probably send him material — Mexican Cones etc.

Nothing else to day —

I get today your names of Hall's plants through Parry. O. fears the Brown Marshal has hold of me and interdicts correspondence, because he has nothing from me

Don't forget

Marcuse & Baltzer, bankers
N York

and for to send Reefs, to their care — any thing, you may have for me.

Ever truly yours

G. Engelmann

Abies grandis widely varies with emarginate, obtuse & even acute leaves — probably all the other Abies proper also!

Picea nigra varies very much in foliage, P. Engelm. also, but not so much as far as known at present.

And why should they not? Look at the difference in foliage of Juniperus Virginiana, Sequoia gigantea and many other Coniferae

G. E.

St Louis Febr 27 1873

Dear Gray

yesterday I got your letter! Only think, that I find in my spec. of A. Candicans gathered in September in your garden, remnants of male flowers. So far all good & right! It is a very small globular ament, 1/3 the size of this figure, on a long stipe. But it seems to come from the branch of the same year, while all other species, also Douglasii, have their male aments on last years growth!

In going over the whole ground after a full investigation of male & female flowers fruit and foliage all the 6 sections or subgenera of Pinus are excellently well characterized, with the exception of Larix and Tsuga!! Perennial distichous leaves ~~for the~~ and stipitate male aments for the Cedrus & fasciculate deciduous leaves and sessile male aments for the former constitute the whole and sole difference, No difference in anthers, fruit or seed!

But Larix and Cedrus apparently allied so closely are very different in all their essential respects.

What results to draw from these staggering observations?

All the apparently great differences of the structure and dehiscence of anthers, of the cones and of the seeds can not disturb the old Linnean genus Pinus!

I have no difficulty with all the others and would cut Picea and Abies asunder unmercifully — but this Tsuga and Larix business is a stumper, which will throw them all back into Pinus!

I doubt whether Parlatore will come to that conclusion, but we will have to follow Hooker and Endlicher who sustain old Linnaeus. — Endlicher in his Coniferae, however, is by no means exact and reliable.

Abies, Tsuga and Larix have nobbed, transversely opening anthers and flat leaves.

Picea & Cedrus have erected anthers (so that the d'ment looks like a small cone, the rest only being visible) and quadrangular leaves.

When authors speak of erected anthers for Pinus they must have had Picea only in view! —

You are no doubt right in distinguishing 11 dimorphous leaves of Dacrydium from the difference in ~~fol~~ leaves of Abies etc.

I send a note on Gentiana. I believe nothing else of Dr. Hall to note from my side — though, I see, that Hall takes exceptions to some of your names. I have now no time to look them over, with the exceptions of these Gentians.

Where will you print them?

If you coincide with me you will print all the Pines as Pinus grandis, Menziesii austriaca etc.

Ever truly yours

Asa Gray

Since I heard from you, that national Reading Plan has started into light and I am surprised to find my name among the chosen 50. Who chose them? — Agassiz? — who started the whole thing, Agassiz eye? will it work? What is the object? a little politics mixed up with it? Wilson's name seems to indicate that — And the starting of such a thing — such a time!

I can not come to New York — hope you will be there and tell me all about it. —

I have made "Gray's Peak" the highest in Colorado, thus far!

Ever yours

J Engelmann

No feeling for peace yet with you — still blood thirsty destructiveness? M.

Sir our old friend Short is gone! I never had met with him, but had correspondd Long — Dismal times altogether again about Vilas etc. — frank journals, but he is such a good and kind man!

for Gray

Hall & Harb 40 I take to be Sisyrinchium iridissimum Eng & Gr. Fort. — certainly not S. ramosum, my specimens at least. 42 Drabe nemorosa but 41 seems different by smoothness, shorter pedicels etc.

I see you make 493 Polygonum coarctatum but I can not doubt that it is P. polygaloides "inversus operis"

Can 496 without and 498 with calliferous ribbons belong together? and both with their dentate calyces to Amaranthus albiciplus?

Where did you get the chance of Larix? spherical Pollen grains? They are absolutely like that of all other Pines!

Abies, Picea, Tsuga Douglasii have the male aments on the old branch — but I suspect Ts. Canadensis has them on the gray branch — look out in spring! It would be an anomaly. — No!

St Louis April 4th 1863

Dear Gray

I suppose you have been glad that I did not pester you with letters — as you say you have no leisure at all now.

I have not come to a conclusion about Pinus-Genera — but suppose

still, that if you break up the Linnean Pinus, you have to go the whole length but you must acknowledge Tsuga also and keep Larix separate from it by its foliage!!

I have not done much botany lately being much occupied with other things besides a laborious practice of medicine. Thus I have spent much time in the calculation of Perry's barometrical measurements, which give very important results, as you will soon see from my article in our Transactions.

That genus of Hall, 685, allied to Calamagrostis, is curious; the petaloids or reflexed stigmata are different from any figured by Kunth

stigmata penicillate!

I was amused at your coming over to my opinion in regard to the position of male flowers of A. Canadensis, while I have satisfied myself that your first opinion was correct — they must compress in all the single leaved pines, from the old branch. It is even the same with the female flowers! It terminates the branch, to be sure, but the old branch — being developed from a bud which most probably does not bear leaves at all! It is even thus with the terminal fem. flowers or cones of A. excelsa and A. alba. Of the latter I have found here a fine specimen in the possession of some ladies who were making pretties with the cones (and also there good cones of P. rubra) I know all about the position of cones of A. alba — they are terminal and lateral, more or less in the direction of the branch, pendulous with it but not recurved as in A. nigra and here (always so?) are they always recurved in A. nigra and never terminal?

In a month I shall trouble you about those flowering pines!

Thanks for the Books etc. sent — they have come safely, but the Russian plants, which were somewhat crushed.

St Louis June 4th 1863

My dear Gray

here I am again!

1, thanks for that Cambrai. it came very apropos.

2, thanks again for the two cones and brambles from Prof Chadbourne just received.

3, The Hemlock, you sent, has globular, spinulose Pollen — knocking all analogy in the head! — I should like to get more male of the Hemlock.

4, The Abies balsamea you sent some time ago must be something else — perhaps pectinata! Look again! — The fem. fl. have extent bracts, the aments is elongated; the male stamens sessile. The other day I found a tree of "balsamea" overlooking before, with young cones now over 2 inches long, and with withered male aments, very small and on long

stipes.

I send two copies of my paper with corrections (your copy had none) on pages 129. 137. 181. 203. 207. 209. 210. 216. 218. —

Please send one to Prof Chatton the other inserted Libiturus.

Please cut off next page and send to Prof Chatton, with your recommendation!

Can't help you, this is the spring time, the high time of nature and the primes are in flower — so we have to be active!

Ever yours truly

J. Lequereux

I have for Pinnulis — P. nigida and hoppi — but nevertheless send what you have of them

I find I have not written to you for 2 months; but you see I have not been idler, & thanks to my friends who have "fed" and even stuffed me with Pines pretty thoroughly.

Thanks for the plates of Grasses.

I had sent through Smithsonian copies of my pamphlets to The Hookers, Bentham, Boott & Lindley. My friends in Germany had not yet got their copies, while some I sent by private hand much later, have arrived.

Any thing about Academy of Sciences keep me posted.

Baird, I have heard intimated, may have been left out, because somewhat implicated in the war against Henry and the Institution a few years ago.

I return Prof. Chamberlain's letter.

I forgot to tell you of the wonders of P. Banksiana. Smallest cutting of all — Smallest pollen also. But the curiosity is the seed, which is absolutely like Picea, the whole exterior surface covered by the wing which the nutlet is detached.

Now on question of Synonymy the figure in his Blattstellung figures comes

of Larix pendula exactly like those of L. europaea; Mr Canby sent me a Larch as L. pendula which is other at all I do not distinguish from Europaea; all my native sp. of American Larch are Microcarpa. What is L. pendula? How do you solve the confusion.

I guess you are right about petals of O. albidaulis; but that was only a minor character, the seed and capsule establish the species.

Yours truly

J. Engelmann

I learn that a Mr Arnold at New Bedford Mass has a large Cereus gigantea which bears flowers and fruit. Can you learn any thing about it. Would it be possible to get flowers in Alcohol?

Keep that $50 for me a while! Do I owe you any thing?

I am very busy professionally and do little in Botany — Weather unusually cool no good Tomatoes yet or Gombo

Lady's p. [illegible] Mr. of [illegible] [illegible]

the Skunk Spruce of My Chatham; I find the same odor in the bruised young leaves of the Thuiens in Specimens.

I should like to get a few good ripe cones of Larix Europ & Americ. If your gardener furnishes them, on exit of the seed. I have Canyon seeds of L. Eur. covered with balsam resinlets — and just now exam. (abortive but full grown) seeds of L. Americ. without any. I want to ascertain, whether that is a regular and distinct character. but don't go out of your way for them.

You did not send me the few fl. of your Pinus Mughus; — send the young cones yet in your next! It is very similar to P. pumilio (and both perhaps identical?) but very different from P. Sylvestris, to which both have sometimes been referred.

Mughus: Staminiferous aments cylindrical, much longer than the bract, involucre 6 leaved; anthers strongly crested (the persistent)

Sylvestris: Staminiferous aments oval, much shorter than the deciduous bract; involucre 3-leaved, anthers very slightly crested.

Stow: Aug 13' 1885

Here, my dear Gray, have you a dry forage abt Pines, which has been accumulating for you. Hope you have leisure now, and secrecy — perhaps you are not in Cambridge at all. I am bound here; glebae adscriptus, and must stick it out a few years longer!

Ever yours

J. Engelmann

Gray

Pinus Chihuahuana, Wright 1888. correctly determined by Torrey notwithstanding my very poor description in P. Wil. It is easily characterized and distinguished from all its allies by the loose sheaths of the young leaves, which are entirely deciduous in the old ones, in both respects like Strobus. My specimen is very curious and I want you to compare yours, to see whether the same takes place with you. I believe I can divide my specim in 3 parts 1, oldest part — leaves without sheaths, $2\frac{1}{2}$-3 inches long;
2, a short shoot 1½ inches long, leaves with sheaths 1¼-1¾ inches long; sheaths a little worn, shoot terminated by young cones, about 5 l. long
3, terminal shoot, about the same length, leaves young, 1-2 inches long with fresh young entire sheaths, bearing a few male aments and at the apex a very young cone, just after flowering, 3 l. long.

Question: sheaths persist the 2d year, completely deciduous the 3d?

Do male aments occur mixed with the leaves? not, as usual gathered in an inflorescence at the base of young shoots?

Are the fem. aments terminal (rather subterminal) or are they also occasionally lateral? — Do 2 & 3 belong to the same season?

Please examine your own specimens to find how they behave! When was it collected?

I believe I have the other dry asked about Wright — and as longer a year ago I requested you to replace my name

among the subscribers to his collections.

I just (Aug 9th) got a letter from Greenbay Wisconsin, from the jealous Mrs Austin (the same who sent a whole box full of Oldenkissian and resinous), including the veritable Picea alba, and now for the first time I see, why it is called alba. The young branches of this year are white. So the question in my last letter about the geographical extent of this species is to some extent answered. — How far south is it found? I think I should recognize the species without cones always by the smooth, light colored branches — pliage too uncertain. — P. alba seems to be more common in culture in Europe than nigra, and from the Bot Garden in Naples I have received the cones of this species (three under) different names: alba, nigra, Magiesii !! — Dr Schaubbum is also fond of labelled nigra, in Heidelberg and Goettingen comes etc. —

Pinus mitis seems to have the fam. aciculate lateral (not subterminal) but differs in the arrangement from rigida etc by having only a short bunch of leaves above them. I must see more specimens to find out whether that is a constant character. I add the Mexican P. patula to the lateral pinites ones.

Does Wright get the Westindian Conifers?

I believe I have asked you before about the limit of arborescent vegetation on the White Mountains, which I have assumed to reach to 1000 feet of the top of Mt Washington. I can not find any data. Can some of you Academy tell me?

By the way of Prof Guyot (Princeton N.J.) A year ago I wrote asking advice about the calculation of Parry's barom. obs. and again 3 months ago I wrote and sent a number of our Transactions but never got an answer. Did it not reach him or is it in his nature not to answer?

Torrey is no better, but I suppose he is getting too old. I should have liked to study his pines so much.

I have just gone over Michaux Sylva. How incorrect and negligent are those figures!! Scarcely any one is correct as to the position of the cones — nor can one distinguish old and new leaves, which by their sheaths care always be known.

Michaux I see speaks already of the disagreeable odor of Pinus alba

[illegible] — [illegible] — if possible — flower and fruit. —

Here, balsamea has born fruit here but all the seeds are sterile, though well formed.

L'Conte, who was here [illegible] ago, as Assistant Director, has left again for Philadelphia — He told me that Leidy had resigned his position in the "Academy" — He promised to write in all about it. —

I have done as you have treating the matter with "masterly inactivity"

I have divided flower of Cereus gigantea from Wright or Thurber — don't want it now particularly.

P. Chihuahuana is curious and attractive, and certainly my plant. I suspect that P. deflexa Torr Rock Bed is my microphylla Wislz. Mexn. (Engelmann is here). —

I have scarcely ever looked at Mosses or Lichens, and Wright's would be entirely useless to me. But let me have in other collections — I suppose you know ~~that I have~~ how far I have got them; — I have not got any since the war commenced.

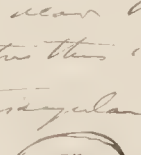
St Louis [illegible] 1873

Dear Gray

A few days ago I safely received that magnificent publication in Welcome to his Many thanks, also to you. What a curious plant, and how thoroughly elucidated. It has a particular interest to me just now on account of its relations with Coniferæ.

I could have written sooner but I felt ashamed to have to disappoint you about Sporobolus. When, in September, I went to hunt it up, where I had seen it in flower in July, I found everything parched up and nothing left of the plant in question. Too bad, but can not be helped now. [illegible] I had [illegible] for that plant, were not more successful. —

I was out a [illegible] with a friend twenty [illegible] on the River bank, [illegible] Aster anomalus (what a stupid name

abundance and other listing and Solidago sp. and also on cliff overlooking the Rio Grande [illegible], which I took in at Stillwater. As it was get in bloom I [illegible] examine it. I might have been able to compare the western Stellatum and cernuum with it. It seems near the latter, but erect. Outer reflexed repeals, shorter than involucre, stamens much exserted, leaves triangular  and shape nearly roundish — I shall send you bulbs. It is the same which you [illegible] in manuscript under my name.

Some Aster are cultivated here by a kind of mine, and conspicuous — Ayenus grows entirely out of shape, 5 feet high, covered with a profusion of flowers; ayenus especially I could scarcely recognize — with turbinellus and others do not change.

I am at the next pic — word which I try to keep separate, though they certainly are very closely allied. Perry has sent specimens of "Aster [illegible]" from "western Texas" which is clearly P. cambridge, so that this species is [illegible] found north of the Rio Grande!

The only thing in Whipple's Work. Exploring Expedition, I am wanted to see how he views the structure of orange berry, whether 3 locular or 1 locular; I myself have no doubt as to the structure; and have now also examined Ph. Salicornioides, Decandolle, from Dakota.

I have not written to Dr. Calvin yet, but will soon, and have sent him material.

I have now Abies alba from St Croix River, Minnesota; — I am more confirmed alba and nigra — but find nigra a most variable plant.

I have seen seeds of both sp. of Larix and have another blunder to correct in my paper: p 211, Larix — — testis [illegible] balsamifera destitutis.

I am tired of political controversy, sorry you hate our good friend the Connecticut Yankee [illegible] — I hope the hate will not go too deep — but would remind you that if you have to vote over 1/3 of the Connecticut people, if you are consistent, [illegible] if you begin to hate also a goodly number of your neighbors who [illegible] the war to get "prosperous" on it and the wide on the warhorse their own straight to perdition, and the whole country!

I respect Wright for the independence of his opinion!

I should like my [illegible] to get full specimens of [illegible]

I do not know if yet enough to venture on a this? letter. Sp. L. does not answer the seeds accompany. I by a pamphlet which ~~made~~ contains matter that can not help interest him. He doubt would to write a ° I will test yet along without his advice. With sorry it is a different thing; I shall not hesitate bother him relying on his kindness.

My material of Lilium Canadense singular, nominately it is rather poor, and I believe that should run into one variety. The alpine sub-species of Europe which some have confounded even with L. selosiri but which is very distinct in that species.

Let me have some of your Aquilegias or Meghies; I have print from N. Spain, Alps and Bohemia.

You write that you send shoots with young ones — but they never came to hand — though the melocoto did.

Thanks for those seeds — they are characteristic for the genus, but all the species I have had occasion to study have had seeds almost equal.

Have you observed that the berries of

pollen-cells are ejected from their cheathing in the woolly head, with some force, the ejection of a pod or two in some species it has been seen to be the case.

I had overlooked Michaux's Flora & Silva in regard to description of Pines. I am glad to find that he always mentions the male aments as characteristic.

I find it stated that Schacht in Schleiden & Nägeli's Botanische und Phys. etc. 1854 gives a detailed account of the pollen of Coniferae. p. 148. 284. fig. 2. I should like to see the work — do you know anything about it? — or about the above quoted remarks?

I am glad to see you at work — Vegetate Genera and Astragalus, etc. I doubt you will get through well. Do you still make our pale yellow Astragalus Bicr = A. Mexicanus?

We are glad to learn of Mrs Gray's improved health — and hope it will continue to get better.

Ever yours

J. Engelmann

Have been snowed up yesterday!

[illegible] work! I have half wished to be imprisoned for 6 months to be able to rest as old & weary [illegible] as I am now, I can not rest!

Thanks, also for your cuttings from newspapers — I had not first out to you the great difference between the opinions of you (who were all good Northern men, fighting with them) who would see it a foreign foe, and opponents of our day who think that peace even with a sliding of the Union would be a greatest blessing, for greater evil than this desolating & demoralizing war, have sprung up for north and south — Shall I see you the dipping of return?

[illegible] I go to call by the time [illegible] the [illegible] wife [illegible] our [illegible] good [illegible] if we [illegible] have [illegible] a [illegible] and enjoy the [illegible] before us.

Good bye

Yours [illegible]

[illegible] 1863

[illegible] Gray

Thanks for your Wiers Isoetes. It is exactly my plant, but a better specimen and, I really believe, the same Gray's I. echinospora from France some time ago. I have reexamined Isoetes and find that I have of the Pohlake plant only a miserable fragment left — I shall send it first with you, then with [illegible] seem to have [illegible] of the H.E. [illegible] — but now you have no doubt seen that he got full [illegible] that plant [illegible] personally — [illegible] that the only Isoetes found in Lake Lakes should be I. echinospora — in Lago Maggiore and L. Winnepesaugee [illegible] is small [illegible] The Pohlake plant is as well allied to I. lacustris as it is to echinospora and is probably the same, though the leaves are more slender and the

[illegible] got a wife ([illegible] or Orkney) of your [illegible] Lake Lacustris [illegible] it [illegible] subsequent?

[illegible] spores still [illegible] if I could get you with [illegible] species [illegible] would be much pleased.

I had occasion [illegible] Elephantopus [illegible] and am neither [illegible] possession [illegible] E. tomentosus from E. Carolinianus, [illegible] remains [illegible] position of leaves; — but all my specimens [illegible] constant in that — no intermediate or doubtful ones. A specimen from Guadeloupe given [illegible] E. scaber [illegible] [illegible] named? — One of Hooker's "Carolina, &c" [illegible] is that what you call E. scaber? [illegible] I refused [illegible] [illegible] the Yankees, will [illegible] Let the [illegible] slide or [illegible] quarters [illegible] both E. tomentosus & E. Carol [illegible] not [illegible] plant.—

Through Mr Canby of Delaware I have got E. nitens & Texana besides [illegible] and find nitens rather different from our Missouri plant — though probably not specifically distinct.—

The days are so short and I am so busy professionally (more than any time this year) that little time remains for botanical study and make little progress in [illegible] with [illegible] & Parlatore.—

Mine in San Francisco promise more material next spring. What is the best way to send from thence? The steamers are so expensive.

I drew on you today for Hendler, got 99.50 for him.

Don't trouble yourself about [illegible] Abies, but get me good specimens and a spare cone or so to cut up when you do get at them sometime or other.—

Many thanks for Schacht — it is just what I want, I shall return it soon.

You will have found in that "tirade of secess. stuff" a good deal more truth than poetry, I guess. And as to your standing guard over me I could not wish a better luck — if you would permit.

C. F. Austin has wrote to me about Callitriche 6 or 8 months ago, and I have sent him specimens; he says he has examined your & Torrey's herbars. Afterward he sent me a diagnosis (not very scientific) of a few species — one among them new which he had found in N Jersey and which was also among my sp. from Arkansas and Tennessee, a terrestrial form, which he named C. Pagilhardianus — and which I now find is the terrestrial form of C. deflexa (and short pedunculed) which is Nuttall's C. pedunculosa = Torrey Nuttall's. He also speaks of a new Pogonia and sends a specimen; also some Sphagnums.

Who is he, and what are his scientific claims? He seems to have zeal — and he was the first to direct my attention to those Callitriches which I had even neglected. —

Ever yours

A. Gray.

I just get the written bombastic more than poetic mentions Cathay shall return with translation at leisure!

No time or mind to say on the Guerilla warfare about politics — though a great deal might be said, with Gd at 240 and the enemy again in Pennsylvania! Peace Peace be with you!

St Louis July 6 1864

Dear Gray

Do I get old? lazy? unsisterly? — I intended to answer your of May 31 long since but did not!

That array of "Carex grandiflora" just received from you is any thing but that! Probably an erect column near Carex — with array with few naked scales — C. grandiflora is climbing, rooting, array with 40 or 50 or more small scales with bundles of bristly spikes in axils.

In those Carex notes ought to be made whether night or day flowering, or flowers opening permanently or also whether stamens erect or declined, and whether separate exterior rim of stamens, which is very marked in grandiflora.

Did I tell you that in your "Lessons" page 96 you figure Carex caespitosa for Texas and not Mann. viridula from the Upper Missouri p. 38 last line means no doubt "above" for "about" — they are a great deal larger than I have ever seen them.

In 1856 you showed me the excentricity of the pith of Abies Douglasii, the same is the case in Aesculus's quinquefolia and in the same sense in the greatest thickness of the annual layers towards the support, and the pith away from it.

Please enclose my letter to Dr Wright

I see from your publication that you did not see Braun's original paper on Callitriche etc (the monograph with plates is not out yet) his C. Heal. Americana is Nuttall's C. heterophylla in his N. Arkansas; he is the only one who ever found it — near Fort Smith. —

And did you get a new german monograph on Callitriche? by Hegelmaier? It has induced me to revise my Herbarium on this genus — I find him so far correct, but can not compare the true verna ~~with~~ as all my American verna & most terrestris is his C. Asagraei and my European verna is C. stagnalis. To Nuttall's pedunculosa and peploides he gives new names, not known; Nuttall's C. Ark, which is little known in Europe, even Boissier did not know it, and Walpers evidently does not.

Nuttall's peploides (at least what Austin calls so, and which is so distinct from any other species by the fruit) he calls "C. Drummondii" — and his pedunculosa (Torrey Nuttallii) he names C. deflexa etc. —

I should like to examine all your Callitriches — just send your Herbarium entire — i.e. all Callitriches and I will return it in a few weeks. Durand will send me the original of Nuttall's species if to be had.

C. autumnalis is perfectly distinct from all — even a distinct subgenus — and he has not seen it from this country. ~~The~~

If you do not, I will after examining your herb revise the paper for Silliman, ~~and~~ enumerate the Am. species.

By the way, did Lindheimer send 1843 a terrestrial Callitriche from Galveston, which includes 2 species — one is that C. Drummondii — peploides — smaller leaved — the other, a little larger is the terrestrial Asagraei — the cotton form of which is Torrey's Nuttall's "C. vernalis?" quoted by Hegelmaier.

I am sorry to learn from Fendler, that he is not going to help you, and I am afraid that Mr Shaw will not employ him again — I am sure that Fendler for the present prefers the wild woods — he writes quite poetically about his woodland home — a very primitive one at that. —

Please send me the Cuthbertia well packed (with your Callitriches, if you can spare the latter) by Express.

Have you a specimen of Torrey's Callitr. marginata (N. Wipple)? If not — I ought to have the smallest branch with fruit to examine — as it may be identical with Hegelmaier's C. macropteryx from New Holland and Torrey's name ought to be vindicated. — But Torrey does not send me anything nor does he answer letters, which for a while I wrote to him quite angrily.

I send a few leaves of Pelargonium, called mistakenly from your garden. Are the leaves of your plants like this?

St. Louis, Sept 29 1864

My dear Gray

It is fortunate that Callitriches are not so numerous — so I have a reasonable hope of getting through with them — but I cannot help being slow and conscientious (or radical!) about every thing I undertake; every specimen is examined, and often parts of it drawn.

I find that C. verna, at least what Küting calls so, and what Hegelmaier considers so, is a common plant northward — the European and American plants absolutely identical — a line from New Jersey or Pennsylvania west northwestward is its southern limit. A little north of that line and all south of it occurs the allied but well distinguished C. Austinii or as it probably ought to be spelt C. Austinii, the only form we have here. It is possible that Pursh's heterophylla etc means this or forms of this, or of both — but I suppose those old uncertain names ought to be disregarded especially as Austinii is well established by description and figures.

Of C. verna you have several American but only a single European specimen and that now & wrongly C. autumnalis!

Have you any correspondent or lake champlain? Michaux' locality for C. autumnalis? It is quite possible that the

and not of a mere var. of C. Austinii? I have strongly suspected this for years. But I find it very difficult to trace the Linnæan plant.

or his Swedish, the Callitriche?

a form of P. excelsa (Himalaya) But it is quite different, though it belongs near it and Strobus, and unites Strobus with Cuba though more allied to Strobus, and its only and curious representative in Europe.

You don't mention Mrs Gray; have she been there fall — give her our best regards, Mr Engelmann and wife.

I hearty wish of the success to Wright — I had to day his Callitriche from the Canada in my hand, it is C. Asa Gray! —

I must have wrote you, that I count his Cuban sets, and you charge me with the amount?

Has Wright no inclination to go among the Blacks of ~~Florida~~ Hayti? I am afraid he is not black enough for them — but he would find plenty of half known and unknown Cactaceae and I dare say other plants.

Ever yours

G. Engelmann

I must have mentioned other things, but other questions in my last letter which I now do not recollect and which you do not touch upon.

from Canterbury, which Clintons send from St Lawrence River, may grow there. In Shawe's (Richards') Herb. in L & K are original specimens from Kilfoyle of most species. It is quite valuable in many respects, but poor in Drummond plants. Beyrich's "regul" are there, but not Drummond plants.

Clintons gets Cuscuta influxa in his neighborhood.

Bolander in San Francisco announced to me in the spring a large package of Coniferæ, though Brewer and you — You sent me a part last summer, but the majority, including Torrey Miss Douglas's etc have not come. Did you ever get them — or were they left in San Francisco and never sent?

No news from Parry for two months! I hope he is safe, though I can not account for his silence — unless mails have been destroyed by Indians.

You have not added in your latest edition Euph. glyptosperma and serpyllifolia of Durieu, and have not allowed the name of hermandidey into serpens HBK I believe.

What do you say to my perseverance, that I have again written to Parry — through a friend who went to New York. I have had no news yet of the result of this step.

Thanks for all the information about the Academy. — They far. I do not know what good it does or can do, unless it is to minister to the pride or vanity of the members!

Well, McClellan is certainly not on my platform, which is peace, but I vastly prefer him to that man Lincoln, military man though he is — You however should not complain of military men being made presidents of, having done that twice, not because they were able, but because they were available — Harrison and Taylor.

The papers will have told you, that we are having a big scare just now, our southern friends are within 20 miles of the City, so the evening papers say — with 15,000 men — well, Washington had its panic often enough and a good deal of it last July, they should we not indulge a little. — If they really come here, a great stampede will take place and much blood will flow, for the citizens are about equally divided it seems, and civil wars will break out here — but serious people do not have much apprehension of such an event, — If they ~~only~~ friends and foes — will only leave my herbarium and library untouched, it is my selfish wish.

I hope you will lay aside your Euph. Astaroe, Cacti, Alismaceæ, and Callitriches, the latter dead in a letter.

Mann ought to study and collect the numerous Euphorbiæ of the Sandwich Islands some of which are not known in print yet. Any Callitriche?!

Grisebach writes that Hooker declares Oliv. Decne of Fr. ~~Pfeu~~ Preeve, + Ge

Ithaca Oct 6 1864

Dear Gray.

I write in haste to inform you that Judge Clinton has added another discovery to his former ones — that of Najas major, All. "in an affluent [brackish?] of Onondaga Lake a few rods from the Lake, at Liverpool, Onondaga Co N Y." Communicate it through Pl. Pl. Journ! Was it ever known to occur in N. th America? Kunth mentions only the Sandwich Islands besides Europe. His, Clinton's, specimens are females, in flower and fruit.

What has become of Eaton? Prof Mellenius asks about him, he has not heard any thing from him since the war began.

Please send the enclosed to Tuckerman.

No news from Darby.

Those three divisions of Callitriche are so natural and pretty, that it is astonishing, others have not been struck with it.

1. Terrestres: always on land, styles and filaments short, no bracts

2. C. aquatica typically floating with long styles, elongated (after flowering) filaments, and with bracts.

Land form similar to last, but bracts usually present, styles short, ~~stam~~ anthers always abortive, filaments short, ~~bracts usually present~~.

Submerged form similar to next, anthers abortive, ~~sty~~ filaments short, bracts usually absent, styles short, ovule often abortive and ~~fertil~~ abortive, though fruit may form.

3. Submersae always under water no bracts, filaments short, styles long.

The terrestres are all American! — Austin does not write, perhaps misspelled!

Tell me about those pines, I have sent — or did he not send any more than I got from you?

Any Callitriche in his or Brewer's collections?

Yours truly

G. Engelmann

I want Wright's Callitriche & Pines &c.

Abietineae

I Fructifoliis annuis

A Dehiscentia anth. transversa

a. Pollinis gran. simplicia

1. Larix Pollinis granula ovalia

2. Tsuga

Pseudotsuga Poll. gr. oval.

Micropicea Poll gr patelliformia

b. Poll. gr. ternata vel in sequentibus omnibus.

3 Abies

B Dehisc. anth. longitudinalis

4 Picea

5 Cedrus

II. Fruct. biennis.

6. Pinus

In regard to Pinus I have discovered that the character: Ascenta feminea verticillata does not hold good in P. rigida, P. serotina, P. Taeda, P. inops P. Banksiana (and probably P. virginiana) In this they are lateral and usually in several whorls, the branch growing on and terminating sterile some distance above the upper most ament. Mr Canby of Chadsford Pa has assisted me in these investigations

P. Strobus, P. resinosa, P. flexilis, P. aristata follow the old rule — P. pungens P. australis P. glabra I have not seen.

Of P. Banksiana and P. resinosa I have got a box full of living specimens from Wisconsin.

I can not get P. alba from any place but Maine and Quebec — does it really extend to Rocky Mts as you told me (after Douglas)? It would be important to trace the geogr. limit; how far does it go down south (authentically ascertained) and west? — P. rigida we know as far west as Wisconsin.

What does Wright? I have not heard from him for 2 years. Does he get Bidessia fruit for me?

I had a very (superabundantly) friendly letter from Martius. He praises you as the astonishingly laborious — dislikes the course of modern botanists, the morphological — and much more the physiologyse or as he says physical tendencies — throws as sheer at Darwin's theories etc.

Spurlania seed I shall attend to.

Phlox you asked too late. We have only Ph. divaricata and aristata, this is several forms — and one from swamps (glabriflora) which is rare, and I do not now know where to get. —

The last Linnaean Transactions I got from you very interesting — Lomatiaceae and Linum. The author evidently had not seen Planchon's. 2d

I find among my Boltonias a specimen at first sight indistinguishable from B. differens same habit, smoothness etc — which, however I find to be an Erigeron, very closely allied if not identical with E. strigosum.

It is from Shreveport, La, gathered by Gregg 1847 and must also be in Short's herb (now Acad Phila). Still I have seen nothing of E. strigosum to compare with it.

Do you know anything like it?

Letter from Buckhorn says he has given all old plants to Bros. Will look about next year in White Mountains.

By the way have you ever ascertained the timberline in White Mountains — perhaps Guyot?

Why has Guyot never answered 2 letters from me, in 1862 — long and earnest letters describing Mountain sights and asking for information and advice?

St Louis Oct 26 1867

Dear Gray

Hereby return of Parry's letter — also one from Clinton giving a detailed account of the locality of Nuphar major which you may use in your account of this discovery. — On the other pages some notes on Nuphar.

I hope Jenny may surprise me. Where are your "new quarters", in that part of the grounds? — From what you tell me of yourself and Mrs Gray being quite exhausted, I see that she has been working and managing with you — is therefore able to do it — and in pretty good health. Good!

From Austin I have had several letters — nothing of the kind I suspected — but he has inflicted on me all his MSS notes on Calicirch, which show, that he can not write for publication, though he has made many good observations — but so mixed up with bad and incorrect ones, and so illy digested that I am glad he did not undertake to publish himself. —

Did you get my letter at Dennis? ?

I cannot alter the Acer grayi! All the old names: heterophylla, leucanthus, brevifolius, ferrestris, are indistinct and no doubt refer to forms of both verna & A. grayi and as the plant has been well described in

figure & call that name, it bears, truly — Gray

the name is not because you have done much or anything for the genus, but for you as a representative of American Botany.

I do not desire Knight's Cryptogamia — except Ferns.

I am really pained to see this savage spirit in you yet! — it is inconceivable to me, how you can indulge in such feelings — more than heathenish and barbarian, and I can clearly see that it is not you yourself, but that intolerant perverious and agotistical spirit that surrounds you, which speaks through you. You do not read the papers — both sides, and you do not know the facts to judge as you talk! — It makes my heart ache to hear you talk so flippantly about hanging. One can well see that you are far off from such scenes, in security — prosperity and self-righteousness. — I think you about there, with your shameful treatment of poor deluded foreigners, kidnapped after the most approved manner of slave stealing — stealing yourself away from the duties of what you call patriotism, profiting by the misery of the country and actually hoodwinking the other parts of the country to pour out their blood and their treasure for your and your cause. No — such a war must cease, as soon as the "sober second thought" of the people becomes plain. — And such a pitiful and mean fellow you stand before me — and with all those frauds, all that barefaced, high handed despotism — no — you do not, you can not know what you are doing — or saying — if cause

Cassiny in Koenigsberg published a couple of years ago a figure of a Nuphar luteum (Nuphar is Nuttar, not Adema being nom. not adjective, stands unaltered) var. rubro-petalum, which you may have seen, and in his remarks says:

"The variety with crimson petals and tips of connectives of Nuphar advena L. is more common than the entirely yellow form."

Where does he get that information? and is it a fact? I have never seen any thing like it, nor do I find any in Nuttall's book.

Any, ~~[illegible]~~ plant N. pictum ought to be published in coloured print. — Is the western Nuphar (Klamath lake, Newberry) well known? is it not the same? Newberry also only the large fruit. — Besides the 3/4 series of sepals the broad petals seem to distinguish it from advena, and the sepals again from luteum which has much broader petals than advena.

Nuttall does not give the dimension of his flowers, size of sepals, etc.

The lamina of her petals seem to have a closed sinus like the European plant, while advena has an open sinus with divaricate lobes

---

I do not mean you personally, but your party in these speaking — but I am in the most serious mood — opposed though you may call me — the name has no opprobrium for me! Nevertheless very truly yours as ever, E

both vertical & horizontal? Before I had seen this note of Torrey's some of Hayden's specimens (of fulvosa?) had puzzled me a great deal — finding in some the horizontal — other the vertical seeds prevalent.

St Louis Febr 5 1865

Dear Gray

The other day I entered my 57th year! Getting old?!

You see this sheet has been laying about for some time and has gathered up many notes and questions. Don't treat them as you often do, for want of leisure; what you can not answer now, make a memorandum of.

A letter from Baird announces the arrival and despatch of Brewer's California Cox for me. I shall write him, when I get it.

Are the Callitriches are verna!! and Californica? the Mountains!

Mr C. Engelmann,

will Torrey send Callitriche. It is the highest time; if not done now, it will be no use for my paper. I'll write again to him.

Your yours

G. Engelmann

Notice in your Revision of Pentstemon pag 68 that you are inclined to take P. tubiflorus for a form of Digitalis. Buckham had certainly thrown you my specimen of tubiflorus and named me correctly. The plant is common in South West Missouri and N W Arkansas but, if I recollect right, more in the dry open woods, like P. pubescens, not in the humid prairies, or damp woods like P. digitalis, and I think I would never confound both or bring them together. I collected it in May 1835. about where the battle of Pea ridge was fought two years ago.

—

Torrey in Pacific Railroad Whipple pag 135 alludes to a Callitriche pedunculosa of Arnott, which I do not find mentioned in DeCandolle, nor Hendel in Nightingale. Where described? what is it? can you give me the full reference? copy, if necessary the whole — I would write to Torrey about it, but probably would get no answer.

Walpers does not mention Callitriche at all, except to refer it to Monocotyledon!! (Rep. 2. p. 100) but never afterwards has a line about them.

—

Thanks for that Cactus seed from Wright but what about the plant — its growth, flowers, fruit etc ? ? ?

Where is Wright? didn't he get the Ti! quite a rich field!

I do write him again by

Union Transportation and Insurance Co.,
Gen'l Freight Line
Moses Potter Jun. 77. Washington Street
Boston

Agent

[illegible]

Sisyrinchium which I had named [illegible] has been designated by Rafinesque as Sisyrinchium "Raf. disc. 1822" fide Rafin. Atlantis Cornut. p. 17, from Kentucky.

By the way, if your etymology was correct the orthography of Sisyrinchium would be entirely wrong — it would be correct with syrinx, but that the first si is I don't know, perhaps the aspiration of the syllable only.

I am much pleased with that paper on Jaborosa. Who is the Rothrock a Pennsylvanian? his address?

How interesting that old Linnaeus has what we all have overlooked since! — The appendicle filament reminds me of Cissus.

The Calabar bean, now famous in ophthalmology I find in a medical journal named Physostigma venenosum, but can not find this name in Walpers or any other work at my disposal? You?

What is that grass which comes from the south of Europe, rather its roots & which are so extensively used for fine brushes?

Somebody gave me a conical bag 18 or 20 inches long, which was said to come from the Pathans or South American and had a bunch of grapelike fruit in it — Whether this is so, I don't know, but it is evidently from some Palm — a stipule? or can it be a bract, which actually included fruit bunches? The tissue is red brown longitudinal cross fibres.

I think we can for ~~If Asa Gray's Callitriche~~ Callitriche Asa Gray, substitute, by some stretch, Pursh's name of C. heterophylla, as well as Linné's name of C. verna has been restricted to the species now so named by Küting, Hegelmaier etc. C. heterophylla no doubt included also verna, but so did C. verna include C. stagnalis, C. hamulata and perhaps others, as I write Hegelmaier about it, proposing this change. I hope it will satisfy you and he will assent to it.

Why do you keep up Chenopodium? Mr. Terry (and Engl.) Pl. Chipple 130 has shown that the seeds occur

St Louis March 12. 1865

Dear Gray

Your box has come all right, and cost only $3.10 thanks for it. Now, when will Mann and Wright's old ones become valuable by being named? So far they are dead lumber for me and I can not even class them into their families.

What have I to pay — and what have you got in your hands for me? (I forgot how you got any second of mine into your hands?)

I am glad to find No 6 and 7 of Griseb.'s Flora in the box — but 1—5 I never got. How, and through whom did I get them? At all events I want the complete work.

Is G. publishing any more of the Mountain Wrightia — Cat.?

I have their winter over-wintered part of Greggs Mexican

Perhaps Drummond and these Cucurbits. I write him about them.

Have written to Torry about Arnott's Ill. perhaps but no answer. Write today again, and about Sed of A. Williams — with more success?

Respect to Wright; hope he will be well and go collecting again. I would go among the negroes of Haiti — fine field there, can only be dangerous.

Has he any thing for me (Callitrichs times) in his Herb for Collection — if not to give, at least to loan.

Of course I recognized your hand in the Gaura paper!

I have settled on Callitr heterophylla and will then kill Asa Gray's as you desire!

I am often displeased with these French botanists, even Naudin and Chodat. There is often a certain hasty neglect and unreliability —

Send me Blitum maritimum. I do not know it at all.

Notwithstanding Linné's authority, I can not alter my opinion of Sisyrinchium — I suppose albidum can not be distinguished from Bermudianum though it keeps distinct enough here, is earlier and lower — but I have tried in vain to find good characters.

If by Lowell's donation you have duplicates of books — could I not get some I want? Hegel — Petersburg want, Elliott's, Cotaney and others out of print — cannot be obtained!

Ever yours

G Engelmann

Collection, most of which was in your hands for 2 years. Did you do anything with them or with any part of them — Composite or Scrophularia etc? I find nowhere any notes from your hand.

Many thanks for the answer to many of my questions.

Perhaps you can now tell me also about the Calabar bean "Physostigma venenosum"

Send me a Prospectus or something about Lawrence Scientific School. I have a mind to send George there — though perhaps not yet — next fall. He will be 18 next summer. Give me your views if you have leisure.

He is to study Medicine and Nat. Sciences and devote himself afterwards to one or the other as inclination or circumstances may induce him to.

Grover will probably tell you that I want to learn all about Regel's Pinus montana of which in some journal I find the notice that it stands near Canadensis and inhabits Asia and America. I want to know all about it.

The interesting point at this moment, however, is Abies Williamsonii which has cones and male aments quite like Canadensis, but Pollen different from all Tsuga & Larix, and identical with true Pinus Pollen! Rasch's the Pollen characters, or their precise importance in the Head !! It annoyes me but can't help it! the leaves, too, are something intermediate between Picea, Tsuga & Larix!

Get me good full male flowers of Canadensis this Spring. The Pollen is so very remarkable and I must have more of it. — Can't one of the other of your students examine the living Pollen and compare it with Larix — Schacht's book, you sent me a year or two ago, would give good assistance.

Gray

some time ago I wrote a long letter to Torrey about the allies of Suaeda maritima, and requested, if worth while to communicate to you. — Hope he has done it. From a flowering specimen of Sieberia of S. maritima? non-glandular I suppose. Elliott's Linaria can be distinguished from the native and European maritima. But I have no proof of the western plant. — You made a mistake in Hall's plants to distinguish 488 and 489 both are the western form of S. maritima, approaching to Scholeri which certainly is not generically and perhaps not even specifically distinct from maritima. (Have you finally spec. for Scholeri relocated? I should like to see a fragment. — Unnecessary, Torrey sent me a little bit!)

I have got De Candolle's Oaks — on the whole much pleased with them. But how is it that he ignores the Boundary Report — Emory Report and some others — Sitgreaves he knows. Wright's Oaks he has probably split too much, following Liebmann. Torrey's Q. arcuidens he does not know — and his nro 132 Q. chrysolepis comes from the Sacramento fork of the Sacramento River, and not from Chihuahua. The confusion is probably my fault. He ought not have classed those stinted forms of Q. macrocarpa and Q. alba as varieties; that the sessile and the pedunculate, the sinuate and the pinnatifid forms deserve that name much better.

His disposition of Prinos, keeping it separate from Ilex is good, though

I am inclined to consider your idea of Chrysanthemum as a good species.

My tridentata is certainly not a mere variety of nigra; but most nearly allied to nigra. It ought to have received both names to me.

Cf. Lasia remained as a kind and not a species, I think. —

St Louis April 6 1865

Dear Gray

I send these leaves, sheets, notes, that have accumulated, with Wright's letter, and shall write soon more — must wait a little for money — shall send soon. —

I just got your Mandan Plants by mail which I suppose are to be returned?

1479 Cirsium grandiflorum H&K

1480. Cirsium undulatum & grandiflorum

The Cellulaches are all, I suppose, comprised under the heads 1456 — as there are at least two species — a small transition is scarcely distinct for Austin's plant. I shall carefully study them soon.

I find no reference to Pilosa montana Rydb, only the name.

I write the enclosed for Rothrock, which please forward to him.

Yours Truly G. Engelmann

Find out if Prof Gray's copy of Lobelia has Trees

St Louis April 19 1865

Dear Gray

[illegible] McCulloch's Questions were fully, & we see that he was encouraged with all the Pacific R.R. Reports and the Mexican Boundary and Nutting's Sylva. How is that! Even if he should not have known the smaller publications, such as Emory's Reports &c — Sitgreaves he had however. —

He omits G. Dunoon Nutt's Sylva and G. Lindheimer's "Tour West Texas".

I got today pl. of Larix from you the size of the Pollen and of the anther also at once characterising it as L. Americana

You do not have any but these two species, L. Am. & Europ.!

I had occasion to review my Conifers, London and Vibrayes.

The notes of the first & last give important characters. — Of London I have not examined them.

Of Conifers I know only the notes of the 4 species hereby sent — Have you any others?

some time ago for a Russian Naturalist.

I reminded you in the Calaban Bacae "Physostigma venenosum"

I have seen, in some notice the name of Regel's "Pinus mantica" as a Siberian and N.W. American form of P. Cembra — no further quotation.

Thanks for the information about scientific School. — Bad that it is so. I shall keep George for the present here yet, — very afraid of our new radical militia law which claims the services of every male over 18 and under 45 — all other have to pay 300 $ commutation, and to keep the militia generals in clover. George will be 18 in summer. He shall not serve in this civil war if I can help it. But hope it is over now.

So the criminal fools have made a martyr of Lincoln, while he would otherwise have been a very ordinary person!

See what points of Conifers and Vibrayes you can say about us.

Ever yours

J. Engelmann

Cornus florida has long pointed nuts spindleshaped

C. sericea has large, remarkably knotty or irregularly ribbed nuts

C. Circinata (Sandy Hill NY) has nuts with a very broad commissure on the surface slightly undulated

C. stolonifera has a little smaller nuts with a narrow commissure, and no undulations.

I have no nuts of any other species — but Cornus stolonifera, which is a tree here, or large nearly as C. florida, I find difficult to distinguish from C. paniculata, this latter is only somewhat flowery more paniculed. I shall have its fruit, —

Lonicera pilosa I have for Gray and have communicated it to you.

We don't have Viburnum Lentago here, at all. I possess only a garden spec. from Europe — completely agreeing with your description.

Now we have two so different species of V. prunifolium that they may be different species — One is the obtuse broadleaved, rusty form, the other has thinner lanceolate leaves, — both from taken by me for Lentago. but it is not that species, —

You find included 3 nuts of V. prunifolium, the largest of any I have examined; 2 nuts of scabrellum from Mississippi, how very different — deep grooved on one side rounded on the other side

and 1 nut of Lantanoides which I gathered while with you at Beverly in Sept 1856 — (already 9 years ago!!) which is still more remarkable — also deep grooved on one side strongly — bluntly ribbed on the other side.

Now how is the nut of Lentago? similar?

All the others, I have examined, have flat nuts — only scabrellum and lantanoides subterete ones.

I should like to be able to examine the nuts of all Cornus and Viburnum species — some good characters will be found among them. Can you send me fruit of all you have? A few fruit, or one if you are sparing will do.

I enclose a few seeds got by the Railroad engineer G. C. Broadhead in western Missouri; among them two Astragali, which you desired

Société Botanique de France 1864 p. 100

Darien characterizes the following:

Chaetis muricata, Osborn Boott
(I. Englemanni same Cornutty)

I. macrospora Catskill Mts (same as my Echinoc? which Darien has at Sea)

I. Braunii my Waterpepper plant

I. melanopoda E. Hall's Athens 'Allen' plant
I have growing - I suspect it a
[illegible] plant stifled by the drought
we shall see this year.

Braunii I take for Echinospora
macrospora perhaps = Cornutii
muricata perhaps = riparia
and possibly riparia and Englemanni
identical. But let the Botanists
fight it out.

Wright 1460 is Myriophyllum muricatum Gris as I find
from DC. Prod. - why not M. verifolium? -

I find in my herb. M. Tenellum n.sp. from Chapman,
which is, it seems, his M. ciliatum Boott. - This is
not in DC.Prod. nor do I find there two Cape species
M. serratum and M. Candidum. though he knows Chapman's work

I mention this - but do not want to give
you any trouble with it.

M. Laurentia Trend, or something like it
I have from South of Mississippi -
but it seems to be also M verifolium. Broad-
leaved forms are Laurentia, narrow-leaved ones
have same Teeth and are more like the
ordinary verifolium.

I return a paper sent me by
Henry, on Coll. of Ohio & England

one or two species — one is tall [illegible] with contracted panicle, large flowers — Michaux's; the other is very heavy spreading panicle, smaller flowers.

Thanks for all the Ohio seeds sent from Mr. Meehan, Philad., & pl. of pecan — so that only P. australis is wanting of all the ~~south~~ eastern ones. —

I was surprised to hear from Elliott the other day — he writes from Merida, Yucatan, and sends seeds and flower of an interesting Opuntia. Do you know anything about him?

I sorry really gone to California and how long does he mean to stay?

Yours

J. Engelmann

Mount Auburn 1855

Dear Gray

just got yours of May 30. Could answer your question about Nuphar now not seen it for 20 years. I do recollect the fragrance. Comparing my Canadian & American specimens, I find very little difference, except in the ribs of the leaves, which (in the dry leaf at least) are very much more prominent in the American plant;

N. alba 16–18 ribs from the base of leaf & 6–10 from the midrib lobe of leaf obtuse or very obtuse.

N. advena 24–28 ribs from base of leaf, and 4–6 from the midrib, lobe of leaf with a slight excursion.

In the dry flower, at least without soaking, I find no difference.

Nuphar has more feather veined leaves

Thanks for Viburnum & Cornus seeds. It seems that I brought from New England 1856 more Viburnum seeds (lentago, acerifolium & cassinoides) than you possess. — Can you get me lentago & others? Well, I shall have to get others to help me, she never about abroad.

Is it not a shame that you have such a quantity of Himalaya seeds and none from me?

May not S. adscendens be yours in Europe South, and N. alba in America North?

No, I have paid the money and don't want it back besides, I have distributed part of the plants already, and could not well bring them together again.

That you tell me of Austin agrees well with the opinion I had formed of him, thanks!

Whether Fendler will come I can't tell. Asa Gray says he attended very little to the Garden, but he seems fond of gardening now; — he is not as you, as was 15 years ago, and seems to feel the 50 years as much as I do more! He was here the other day and said he expected a letter from you. He seems understand — wedded to his little farm and feeling as if he could not well leave his brother, who is a helpless fellow.

I have written to Delile about the Genoese — I wish you had embodied in Sullivan's Journal in your notice my notes. Torrey who knows more about Geneseas than I do should do it. But if you say, I will write a short note for Silliman.

I believe you told me, that S. gittaria bulbosa Don Hort Cantab ed 6 246 fide Bentham, is a mere name published in a Catalogue of 1798 without diagnosis. If so early, it is not probable that it is a Louisiana or Texas plant, as I formerly supposed, and may be nothing but variabilis, which makes large tuberous stolons.

Yes I have the 2d part of Grisebach N. Cub. published Nov 62 but thought more was out.

Have you got among Canby's plant that fall-flowering Alsine maritima which is also proposed by Nuttall (Sylva)? It is Alsine oblongata fide Regel Monog. who rightly suspects it to be an American plant!

Any thing of Curtis?

I have found the other day Callirhoe Austini abundant on dry hills; shady wood roads, & the Genoese beforing will grow; — have it living in my yard —

Send me a few flowers of true Houstonia Auriculata. I don't think we have it here at all — though I am not certain, whether we have

Victoria June 17
1865

My dear Gray

Our "friend" Schultz sends me the within for you. He may be a good Cerviniareologist ensconced in his Cerviniareological museum, but he is an abominably vain fellow, who measures others by his own vanity.

Nothing new here — our people as I expected long since as the one of the bad consequences of this war, are completely cowed and bow before anything power and before whoever should like to usurp it — fye upon such "republicans"! No — this people is not republican — only in name.

I have at last fully examined Parry's Hupham and find that Hayden collected the same at the headwaters of Snake River. I name it V. polysepalum. It has not 3 × 3 sepal, but they are in $\frac{5}{13}$ or a similar arrangement

I have asked you before, whether you knew any thing of purple-petaled N. odorata, Sweet, Caspary says it is more common than the yellow one. You overlooked the question. I have never seen any but yellow ones.

Have written to Oldfield at Detroit about Nymphaea odorata or alba — and will look here if I can get at them.

You will find some curious remarks about leaves of Nuphar — & Nymphaea in my notes.

Had occasion to examine Caldeli (Trec Frogi), Utricularia living.

How shall I send your Collected back? I think I will give them to some of our merchants going east. —

Yours Truly

J. Engelmann

it from?

Many thanks for the Nymphaea! I took me all the leisure hours of a day to examine, & figure it — a most interesting specimen — fresh enough to well investigate it.

Wilson has found at Detroit Nymphaea tuberosa and Lotus "very distinct" so he writes; and only one Nymphaea, though not always very fragrant.

Please write the analysis of Blennosperm, keep with specimen.

St Louis, July 17 1865

Dear Gray

Here is the rub, and I must either jump, or back out! A letter of W Gibbs requests me to attend the meeting of N. Acad. 23d Aug or I shall be stricken out as a member. It is therefore now time to come to some resolution. What say you? The force of Inertia will probably induce me not to come.

So further will come for the winter. I shall be glad if you agree well, as there are no other prospects of making useful for Science just now.

I shall send by Express your collections as well as a few packages of seeds.

I provide a note, that I sent you a Cornus mas, small tree, in the bottom wood at St Louis, Aug 22 1860 in fruit. Cornus that be as specific — I am quite confident that C. Canadensis species

and Urban Lentigo and principia with idealized first and very variable forms. I can also not keep separate as at present advised.

I doubt whether I can do Wright's Cactacea — Wright snubbed me not badly about my close questioning about Rhus & Cactacea, and scarcely answered a single inquiry; and the specimens themselves are so difficult to make out. Griebel was in error in calling that a Cer. crispatus — Bel I will look at them again and see.

Yes, you will chain that country together with high central power, stamping out arbitrariness, and the big national debt — a Bismarck centralization which I do not want and shan't submit to if I can help myself!

Let me soon hear from you.

Yours

Yours ever

J. Engelmann

Dr Brendel of Peoria writes:
I have found Hydrolea quadrivalvis
Bumichia cirrhosa
in Pulaski to South Illinois;
an addition to your Flora.

Yes! that looks like Cercis Canadensis (C. occidentalis, C. Mac Donaldii also here: California very similar, but not fragrant)

Why, my eyes tell me that those sags of Pentachaeta are white and this about at least can not be called amber. I send you a couple of better specimens, the best I have, for you to keep and satisfy yourself about the colour, but shall ask again Sclander himself.

I also send a Allenrolfia which seems new and is so well characterized by the capsulate fruit, that it ought to bear the name of C. capsulata. It has also been found by Palmer.

Upon present V. Fremont from Gold compared with any other specimens the pomum, sent by you from "South of Europe" has much smaller and different fruit. Where is

St Louis Aug 23 1865

Dear Gray

I hope you are back by the time this reaches Cambridge — and family & [illegible]. I have given [illegible] will also soon be there.

I have written to W. Gibbs as Home Secr. that I can not attend, and that if they conclude that I can not continue a member, they give me the privilege to resign.

If Kew's is not Heuchera hispida, I think Mead's Illinois plant is also not nor Richardsoni — and all is Americana with less slightly (more or less so) oblique flowers! See whether the seeds help to throw any light on these species.

I got to overhauling Junci, and have got some very pretty results; and several new species. But I can not satisfy myself about all the old ones. So you must help me, and get me a fragment, a few flowers, if possible

[illegible] have ! III [illegible]folii — [illegible]

[illegible]florae

J. Torreyi [illegible]

J. [illegible] O. [illegible]

[illegible]

J. [illegible] (not seen [illegible] [illegible]!)

J. [illegible]

J. [illegible]

J. dichotomus Ell.

[illegible]florae

J. marginatus Rostk.

J. [illegible] [illegible]

J. [illegible] [illegible]

J. longistylis Torr. (= J. Menziesii var Gray N. Hk.)

J. [illegible]

J. Menziesii [illegible]

macrospermi

J. trifidus L.

J. castaneus Sm.

J. triglumis L.

J. stygius L.

J. Bigelovii, [illegible]

With the exception of J. [illegible] I can not identify any J. [illegible] triandri. I have a number of species — one for example common here, [illegible] your debilis, [illegible] the [illegible] of all our Junci! [illegible] species or [illegible] fragments, [illegible] I have two, [illegible] may be [illegible] species, [illegible] one or two others common here, which you do not have in Man. etc.

[illegible] yours

G. Engelmann

fruit and seed of the following species, and if you can, do it soon, as long as I have my hand well in it!

The rocky Mountain J. Gallicus is rather different from the British one on Hill, however and going with acute & other with obtuse sepals — and will answer a good much more nearly capsule than the British plant.

Your J. nivalis is very well distinguished by the taller and the true nivalis are the genuine J. filiformis, J. Hankei and J. Thomasii = compressus?

Hoy specimen p. 565 from Canada, is casipolius, i.e. J. xiphioides — with 6 stamens etc. — was it mixed with real casipolius?

The J. tenuis or Greenii which Vasey sends is certainly acus, with long twisted seed etc. I have had Vasey here a few days ago.

Your Mengiesii was not be the true Mengiesii, but I can not distinguish it from Torrey's J. longistylis, so that name will stand. I shall like to see the true Mengiesii.

Europe J. vigilanis I have examined but not seen the examinous form. The large loosely coated seeds are very characteristic for that section.

J. Lindheimeri is a very pretty species, allied to J. capitatus of Europe (annual also?) You will have it from Wright & Lindheimer both. Let J. [illegible] a fragment.

Now, don't fight against it — you have to help me in Juncus, and I will do them thoroughly!

Juncus Flora Bor. Amer.

I have	I Junci veri	I want
J. effusus L.		J. compressus HBK. & var
J. Brachyurus Willd		J. setaceus Nutt.
J. Hankei Hoy? (arcticus Gray & R. Hall)		J. Pylaei Laharpe & var filiformis
J. filiformis L		
J. marinus Lam		
	II. Junci nodosi vivaudi	
J. nodosus Hoy		J. scirpoides L.
		J. polycephalus EE.
		J. debilis Gray
		J. accumbens Wim
		J. Westii Chap
		J. alpinus Vill. & var
		J. Canadensis Gray
		J. subtilis Hoy
		J. casipolius Wright
		J. fractiflorus Kunth
		J. echinatus EE. Kth
		J. Mertensianus Spr. (= casipolius Nees)
	hexandri	
J. articulatus L.		J. acutatus Chap
J. polycarpus Hoy		J. abortivus Chap
J. militaris Bigel.		J. affinis Ell & Sr.
J. nodosus L.		
J. megacephalus		
J. Canadensis Trick		
J. xiphioides Hoy		

Just before going to the Post office I get your [illegible] & Wright's — That Nymphaea looks odd — leaves [illegible] like alba, veins not prominent. I hope you have saved a good specimen for me of the mother & all in a form [illegible] I shall recognize.

I have also to get back Brown's Junci.

— E.

Boston Dec 8. 1865

Dear Gray

Swift is here, to leave to morrow. He is to take your Collections along; so we can alter the lists which I am now laying my hands on.

A few days ago I wrote you about Junci.

I have to add Lupulus. The White Mountain plant seems to be L. perennis but all the Rocky Mtn specimens have wider leaves, more and broad spikes and must belong elsewhere; I have not yet had time to carefully overhaul yet.

Our new Junceus from the Rocky Mountains proves like Juncus Drummondii E. Mey = Lesb. H. Miss! But what his old Hawkei is from the N.W. Coast, remains to be seen, scarcely the typical J. compressus, as

in himself and all the others assume. It may be a distinct or only a sister species for Drummond in which case the name of Hacker's must stand. I shall ~~write~~ write (Charles Wright!!) to Gray for a specimen if it can be got.

I have an letter to Mr. L. Pulteney in the Cist of American Seeds. I sent you Canna. Mr. Gray respectfully substituted Montreal, and I have Montreal, Canada, for Monterey California, as society for Lawrency.

Is Teinx N. exsiccata still supposed Lemna nodosus megacephalus

545 seems ordinary form, though somewhat differing.

Dr. Manual p. 483. (Jamaica trifolium) you have: "rather than" probably is this the word shorter — this is eds. scandish!!

J. bulbosus (Jacobi) are distinct. The former over in U.S.? I have seen no American specimens.

Lamy Recommendations Schedule Linnaea is Jussieu's time.

Meyer in Ledebour Flora Rossica, Linné according to the seeds taken in last table, which is a very poor division, separating the closest allies.

E. Hall just sends me his Lunei, and I shall examine his J. cuspidatus, to see if he can find it different from his Xiphioides. He writes that the Bebb of Hooker has Linné on it standing the fourth — so I am behind hand never mind!

I go just a few journeys when I have overlooked a small study pathwise

Ever yours,

G. Engelm.

The seeds of Lunei are very little different from those of Xiphioides.

Alton: Sept 2d 1865

Dear Gray

So your good friend Hooker is gone! I last think he was 72 years old when I saw him 8 years ago. — I blame myself for negligence in not answering a short letter of his written two years ago! I owe to Hooker's kindness a great deal in the prosecution of botanical studies. 20 years ago he took up my Pursuits in his Bot Journal, and gave great credit to the backwoods botanist!

Yes I shall want your aid in the California Junci, have also written to Bolander, who often sends me plants by mail. But I shall not be able to work immediately on them. But send them by express when ready. The great difficulty in Junci is no doubt that so many have worked at them, to make out the synonymy and the real species

the author [illegible] in views it will be [illegible]
necessary to see the original spe[illegible]
— One of a few flowers, one copy or [illegible]
suffice. I hope I can obtain them
least as it to Company the successor of
E. Lange [illegible] his herbarium [illegible]
[illegible] see the same J. pratensis, which
that J. paradoxus has named! the seeds never
[illegible] been described till lately; is it the
frequent viviparous, so called, expression [illegible]?
[illegible] that is very [illegible] also in Europe, [illegible]
[illegible] I must have Gray's J. macrostemon
[illegible] remarkable southern species, [illegible]
[illegible] South with respides —
Elliott has sent me his collection, [illegible]
and thing, among the [illegible] species of
[illegible] smallest J. acutiflorus (I see you that
[illegible] of Arnott is J. Drummondii they
[illegible] prove it to be quite distinct, the leaves
alone do not seem to be sufficient to separate
it — I have also among Gratiot's [illegible]
a leafy J. Balticus!
I get a good long Carex, Cette, perhaps Cones
— [illegible] original, as it is better
one of the very zealous and intelligent young
surgeon-majors, Weber, in San [illegible]'s Texas, and a
Doctor — Hard scrouges!!
Another much be with you now.
[illegible] back [illegible] Collectibles.
Ever yours,
J. Engelmann.

Do you want seeds of Solanum rostratum? We have this year some [illegible] years, after 10 or 12 years!

Stowe Sept 7 1865

Dear Gray

Thanks for the Juncus paper by Buchenau. I had forgotten that I wrote me some time ago and desired among other plants Juncus; I had sent him Alismaceae.

It had escaped me that Steudel Glumaceae II. 1855 also treats Juncus; but how loosely! for example though he quotes your manual he nevertheless gives Juncus Canadensis and J. viviparus Coss. in two different sections as two very distinct species. His Juncus subinconspicuus No 119 must (notwithstanding Q. & C. Illustr.) be nothing but J. repens.

What is J. cylindricus Curtis in Bot. Journ 4. p. 83 from New Jersey. I have not seen the name before.

J. pratensis Roth I think I know well from near Boston & south I have designated it as J. brachycarpus.

Nine was the name of J. paradoxus given to the plant. If for the seed you does nobody (but Thomas in Botanist) describe the seed? I not on Steudel

Sir, I have your 1st edit. — If the seed was unknown to E. Meyer & his successor ~~who~~ did how did you make out what he meant by J. paradoxus?

Are Lemaire & Chandler's species? — & why is J. eschatus all the same?

I make out two species, which I suppose are confounded under J. eschatus — both with subulate capsule.

1. J. macrostemon — with short stamens — stamens as long as sepals — anthers conspicuous!

2. J. eschatus Ell. with shorter stamens, which also differs.

J. polycephalus Ell. is in its flow & parts very similar to last, but with leaves & inflorescence of J. macrostemon. Michaux had mixed both as he did.

I can't hit off J. Gerardi from bulbosus.

I agree with you to unite J. canadensis with J. acuminatus & not to have both authors & keep them so far apart. e.g.

Steud. No. 42 longocarpus, No. 75 pelocarpus, he also has 60 nodosus x 70 Rothii.

Is Steudel's J. vaillanus, No. 148 a form of J. tenuis — or what —?

Then J. trigonocarpus, No. 181 I suppose is J. paradoxus.

I shall now get the rich Herbar. of Shaw — & then be ready for more. Shaw's has a full set of Nuttall's plants, and is in that respect very valuable.

You see I bother you about Juncus — & you will have to suffer for some time! Give it, wear it, we beg your can!

Just enough to light!

Ever yours

J. Engelm.

How do you get along with the others?

Saturday night 20th

Dear Doctor

in the short note

sent this morning I forgot to

direct your attention to the length of

fruiting period.

C. aurea has long pedicel.

flavula longer

micrantha very short.

montana usually short.

curvisiliqua very short

crystallina same.

C. micrantha has no spur.

Yours

G E

in time

Let me know what you want

Callitriche, Sagittaria etc

St. Louis Febr 1 1866

Dear Gray

Durand has sent me that "Nuphar luteum" gathered by Collins in the Schuylkill (which you had under your eyes) with the permission of soaking and otherwise maltreating it, which I have done and find that the 6th sepal is broken off, the base remaining — and petals and stamens and stigma indicate identity with Bigelow's new species! I have it now from Michigan, Massachusetts and Canada, and the red-petaled N. advena of Sub Caspary speaks, perhaps all belong here? The new Nuphar variegatum is a good species, no doubt about it!

But our obliging friend Durand did me another favor, and a greater one in sending me a flower of N. sagittifolium, which I had never seen before. I was so anxious to see the Nuphars without petals — but did not get to see it! — Petals, like all the others! and the sessile anthers are also nowhere! Who got up these descriptions. It is my hard lot to help such fellows as Buckley and Schede along, since they stumbled on a good species!!

I have been very busy with patents the last month, and otherwise occupied so that ~~I~~ together with the short dark days, I have not done much; but shall, I hope, be more active soon.

Give the enclosed to Fendler, if you please. He writes that his trunk will be full when he comes back, so that he can not bring along that you have for me. Suppose you have it packed in a separate box or trunk, and he takes it as his baggage, checked through to St Louis; that would save 3 or 4 dollars.

Ever yours,

J. Engelmann.

Have written to Torrey but no answer yet; no from Chapman that of Ravenel?

How could I so to send me Muhlenbergs herb. without a letter?

characters which were copied from one book into the next.

Michaux & Pursh & Decandolle have the same phrase "petalis nullis, antheris subsessilibus". And Torrey & Gray copy or translate it. Is it Michaux's or has Walter already the same? What does he say?

Clayton has the nonsense: petals transformed into stamens.

Now, Can I have got hold of something else than the true sagittifolia?

|| Send me a couple of stamens of your specimen, detached from the base and I can tell at once! For the stamens are different from those of any other Nuphar I have seen!

The stigma too!

In my specimen
the sepals are much more delicate than in any other Nuphar I know
petals same as in N. advena, only much smaller
anthers square, scarcely ever longer than they are wide, as long or shorter than filament; connective appendage as usual
ovary as wide as high, without any neck
stigmatic disc wider, entire; rays linear oblong (not linear as in all others) distant from the margin, and each ray apparently on a separate elevation, pulvinus.

Now, you just take 10 minutes and examine your specimen, & see whether they agree with these notes, at least as far as a hasty examination can show. The stamens & stigma you can, no doubt, recognize and tell me what Walter says about the plant.

Durand sends two leaves, one sagittate, narrow — thicker; the other almost orbicular, very thin, (submersed?) but I can never trust Durand much in regard to accuracy; has he "more suo" made confusion?

The same is probably the case in regard to this Durand as another from New Jersey.

But all our Maritimes is distinct from the European plant and must bear Thouin's name of Nelumbium notwithstanding his miserable

which is Hyp. variegatum and also leaves with closed seams. Therefore a species spread over the whole US with N. adnata, not reaching it north, as I at first suspected.

Innocuous News and Questions

What made you put a ! after I. nodosus Lin ! in Manual. (L?) would be more appropriate.

But as Linne refers to I. fasciculatus and as I. nodosus is a northern plant not found south of the Mountains of Pennsylvania, it can not be what you call nodosus.

Have you Rostkovius? If so, send it by Trader.

Another Mistake: I. acuminatus Mx, lived from S. Carolina, and your I. acuminatus ~~grows~~ ranges just with nodosus and not farther south. I think your suggestion as to debilis being I. acuminatus Mich is quite probable true.

There goes a doubtful species from New Jersey to Georgia, which I have seen from nowhere else, which has puzzled Robbins also a good deal, and which he considered an intermediate link between I. paradoxus Gray and I. pusillus Mich, on account of the insignificant tail. But I find good characters now and name it as a peculiar species I. brevicaudus; it belongs to the sub-section Urospermi of sect. Articulati, of which we have now

I. paradoxus Gray	now widely spread the other
I. Canadensis Gray	Name must be restored with T. Sikes Syn
I. brevicaudus n sp	N Jersey to Georgia
I. caudatus Chapm	Gulf states
I. asper n. sp.	N Jersey

Mr E. Smith of Philadelphia has people induced to send also out his fine collection of Juncus of his neighborhood, among which I find lots of my new I. asper, collected 6½ miles from Philadelphia in N Jersey — so that this fine and very distinguished species is quite common-at-able.

His and Porter's numerous notes show how Juncus have exercised him and are partly instructive and partly quite amusing, showing how he groaned

St Louis 14th Febr. 1866

Dear Gray

I hear from Fendler that young Mann will probably take his place. So he has returned from the Sandwich Islands — Was he brought any thing for me?

Durand, the most obliging friend and indefatigable correspondent has ~~brought~~ sent me at once another flower of Nuphar Sagittaefolium and I just come from its examination in my rather cold study (zero outdoors, with a violent North West gale — after 4 - 5 hours riding about to see my patients) So you must not wonder this time at least at my crowsfeet —

it is exactly the same as the one last examined and I must announce that all those authors were wrong, who ascribed to this plant no petals and subsessile stamens. What does Walter say?

Another Nuphar news! Durand sends a flower from Hale, Louisiana about.

But his coll. has another gem! Though only a 2 torn off fragments of a specimen from the Mountains of Pennsylvania, they prove to be something quite new, allied more closely to J Setaceus than any thing else — but well distinguished: the new species Smithii — He must get more and better specimens — and the case, to show whether leafy, like setaceus, or not.

All this has induced me to think of a Herbarium Suroom Boreali-Americanorum normale. What do you say to it? I shall have some help in Bolander, Robbins Webb Hall — I shall write to Smith and Porter S. Hall E. Hall and Vasey about it and hope some will respond. But I doubt of Curtis and Chapman whom I hesitate to ask — What about Radcliff? or any other Southern Man? I would want 100 specimens in flat fr.

Yours every
J. Engelmann

I got Porter's last yesterday

I find other difficulties among the alliance of Sciapodes.

The Pennsylvanian small headed Sciapodes is evidently the mon-stroso of Jay with its very long stamens.

The more southern J. echinatus has larger heads, different ramification, different stamens.

What I take to be J. polycephalus is quite well distinguished, but there is a form, which Curtis sent and confounded with this, also with diffuse panicle and flat leaves, and which I suspect is a form of echinatus, or may constitute a 4th species. They are not fully represented in herbaria and I fail to get the transitions.

Smith has sent me his Juncoi, and pleased me much with them. And I pleased him by naming a Broad mountain species (allied to the Southern

St Louis March 3 1867

Dear Gray

Your letter arrived here yesterday and brought safely all his and your things. Thanks for all the rich gifts — I have not had time to overlook all — and my collections swell up, so that I shall need have to get more room and what is more important even, more time to manage them — always the great generations of time & space!

J. Muhlenbergii was published 1825 J. peloscaphus 1823 — but I am not yet sure, whether Meyer made not a mistake in placing specimens of Conrad (one of them obtained from you through Lehmann) in his sheet of peloscaphus — but I should think that that plant could not well be confounded with any other species.

If Torry will send me his Juncoi, well and good; but I

will not repeat my numerous, pithy epithets about Pines. I have written to Dr. a remonstrance and an answer.

That affair about Short Herbs was a little complicated. He offered through me his Herb. & Library to Shaw, but in such a manner that I thought he wanted to sell. Shaw thought he had already many of the books and plants and would not go into the expense; so I hesitated, and felt bad about it — and at last did not answer. I ought to have consulted you!

Your Nuphar sagittifolia species — I have seen; but the petals are so plainly visible and also the long filaments, without soaking or dissection, that I do not know, how they can be overlooked. I have got a second specimen from Dwase, which also shows the same character, — so there is not the least doubt about it. Thanks for the information as to literature.

If N. lutea variegatum will not do, I restore the name and say N. variegatum.

I was much pleased with your letter, on account of the humor that pervades it.

No, I won't go off half cocked. That would be a bad business. If J. Rodosus Gray Man is in Hooker, roll by Kalm — the matter is settled and the quotations of Linnaeus are wrong! —

So you fear that I am making a very long (too long) story of Pinus. I fear so myself sometimes, and as to several species I become doubtful. This Brewiranda for example is intermediate between pondo. (Gray Man) and Canadensis — and if not distinct from both will unite both!! for distant as the extremes seem to be. I can not admit that the seed alone should distinguish the species — if we other characters help us along.

2, J. setaceus) which he happened to tear off (top only) while waiting for a Rail road train, J. Smith: He will get plenty of it next summer. He is pleased with the idea of a Herb. normale and promises all sorts of help.

But the great business of the day is the arrival of Brewer's 24 numbers of California Juncii

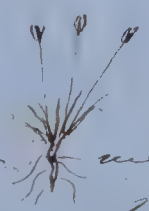
I find 14 species among them and 6 of these not described; 3 I had before and 3 are here for the first time!

The old species are also of much interest — e.g. the Hawaiian J. patens, but before all the real south European J. acutus!!

I now strongly suspect that Meyer's J. falcatus (originally one of Hooker's) — & A Brown's J. Mexicanus are identical — at least Douglas and Pichscholy specimens named — your Herb. J. Mexicanus are falcatus! And the Rocky Mts plant is distinct and is Torrey's J. Coxii stylis! But singularly

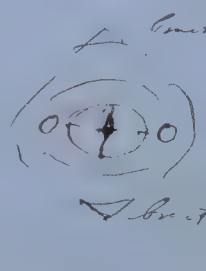
enough. Nobody, not one Echeg, Chamisso, Douglas, Bolander, not one gets the plant in question in fruit — It makes me desperate! I ought to go to California and get the fruit!! — Whether Menzies' plant is the same or not, I do not know.

But now for the bit-bit of this California Collection. Brewer deserves credit for placing that little Saginoides like thing (an unique specimen!!) from the Sierra Nevada among Juncoides. I would not think consider it such — till I examined it.



It is not more nor less than a slenderous, diminutive Juncus!! Somewhat allied to the South American one flowered Juncoides, none of which however is diminutive.

2 bracts, 4 sepals
2 stamens, 2 cell & capsule, many seeds
exactly like Juncus,



cious, is this a Juncus? not Dimeria or a distinct genus Dimeria? The species ought to bear the name of Saginoides.

I shall "stretch a point" and take Menzies' fallacious set; in the hope that my pets, especially Euphorbias which are so fully represented there on the Islands, are also well represented in herb — I am afraid the package will be laid on the shelf with Fr. R. Vanguelin, Wright's Cuba etc plants. Well, never mind, when I am over to the Isles may come to work them up!

And now good bye. I think you have a full dose of Juncus — a congeniandus — and if I keep on, I will throw the letter away!

Ever yours

J. Carpenter

Honi 26 March 1866

Dear Gray

yours of March 20 came to hand. Thanks for your news as also for your former notes on Juncus woodsii, which are quite conclusive. Have now got Juncus by Rostkovius sent by mail from Germany; — scarcely worth while.

Keep those Hawaiian plants for the present but don't let the worms get into them! I have to refund you those 40.50

I thought of giving that Mexican the name of ancep on account of the petioles, but varian may do better; clausum referring to the sides might also do — distinguishing it from adnata.

Juncus run so much into one another that you may make 20 or 60 species in the U.S just as you view the limitation.

Juncoides will do well.

Have written to Hooker, hope he will clear up my doubts about

I suppose I have to make J. insignis, colubrinus & polycephalus and also all the forms of J. acutus and how many of the Californians I do not know — it goes hard, though, while there is such a distinct geographical range for many of them.

Ever yours

J. Engelmann

the identity of Juncus Mengiesii and J. pelocarpus. At least Douglas' Mengiesii in your herb is identical with pelocarpus.

Our papers informed us of Dr Beck's death — I did not think he was so old; O yes, I certainly remember him well, and the dinner we took together at his house.

I have only opened a week ago the package of Mauritius plants. Many thanks for them. How do I come to them? Present from you?

The Japan specimens and the few from Nevada were quite interesting. The latter are all species already well known to me, but one at least and those from Japan & Corea are some quite new — at least undescribed in my books —

Many thanks for them —

Any thing new in this line is highly welcome.

I have more confirmation about J. pelocarpus (Gerardi) in Meyer's own handwriting in the Berlin Herbarium, have to adopt that name.

Out of the specimen of Juncus sublilis they could not send anything, because a small fragment only — sent a drawing — seems to be a form that accidentally got floating — inclined to think it is J. pelocarpus var!

Have written to Raoul and Chapman — no answer yet.

By the way the Cotton J. abortivus can not be distinguished from J. pelocarpus except by the stouter rhizome —!!

What can you (or rather your Mengiesii others) do for the Hub. Juncus. Normale?

Juncus Gerardi, I suppose — but what else?

Robbins promises to send J. militaris but is he reliable? He never written one letter to my three and lately not even a card — Slow coach!

Illoni Apl 4. 1866

Dear Gray

The synonymy of those Junci is sure to be cleared up, unless original specimens can be examined. Here is now J. pallescens Lam.; why is it not to be restored just as J. scirpoides has been? It must be your debilis; but I suspect debilis and pateresens have to come together. Porter though reluctantly, had already called J. pateresens by the name of debilis; then debilis and pateresens would be merged with the name of pallescens.

The contracting mood has taken hold of me — and J. acuminatus (yours) & paradoxus would then go together with your favorite Canadensis — but under what name? as acuminatus & paradoxus are very doubtful — Canadensis is not definite but refers only to the northern form it [illegible] us.

all the scirpoides, echinatus & polygephalus also go together, and also some of the Californians. Wish! Wish!

Get me a copy of Lamarck's T. pellasperus Encycl. III. 268, if you please.

I must hurry to a close — the printer is waiting — a most disagreeable situation!

Yours truly

C. Engelmann

Braun sent me Mayer's Synopsis just as I left home.

Illinois April 14 1869

Dear Jim,

Thanks for your of April 9 — I didn't mean that you should copy Lamarck — that was taxing your already heavily taxed time too much. — The very description of S. pallescens can not be made up much — but it must be a small form of S. debilis — therefore comprising the whole suite of pratermissus & debilis including paradoxus and probably Mexicanus accumulatus.

I speak more positively of S. pallescens now, not on account of Meyer's diagnosis & herbarium only, but from La Harpe's description. I have got that valuable work now also through Brown's jealous exertions! La Harpe gives more detailed descriptions, and is evidently quite familiar with Meyer and his species, and he describes the seeds of paradoxus just like those of debilis & pratermissus.

And then Meyer knew well the capsule of his paradoxus it. — It is vexatious, but it always seems to me as if I had might employ my time better than having my pig taken — I shall have to do it though! No, I have none of Torrey's nor of Short's.

Yes, you can send those Juncus of Wilkes, and any others. It is quite probable I shall have to extend my researches into this genus.

By the way, I found at Shaws the other day the Rhynchospora antarctica and in it some queer things. The genus Rostkovia is not in the least distinguishable from Juncus, except by its large single flower, the seeds & capsule are not different — then, the idea of the testa in most Juncus occurring obliterated or dissolved into shreds except in those with tailed (caudate) seeds seems preposterous. He figures such fibres in the seed of Juncus antarcticus but I take them for mould! Read it vol I page 82 and tell me what you think.

Very truly yours

J Engelmann

and gives a sketch of it in his Herbar.
he figures the parietal placenta etc —
and does not mention the seeds — while
he was well aware of the character
of the "semina subtriquetra", by which
he separates Juncus sect. 2 just
as you find it in Hbr. Rossica.
— So he must have got a specimen
with empty capsules or with ordinary
seeds! Besides, the name is derived
from the excrescences, which are
common in J. patens, but
I have never seen them in our J. paradoxus.

Sahaspi is quite valuable to me
therefore answer soon, if you have anything to say!
I shall begin to print next week;
and give also a page or two about
Nuphar; think I shall call the
new species N. clausum for the
closed sinus seems to distinguish
it as well as any other character
from the open sinus of Aëscna.

Crawford sent a kind answer
but seems broken hearted and
broken in fortune, and not inclined
to do much; Curtis also says his
sight is failing him at least for
microscopic investigation, and the
war has much impaired his
botanical labors.

Chapman has been sick, poor
fellow. Letters helped him more than
the Drugs. He will send specimens.

I have seen a young Doctor here
Dean, I believe, who has been
with Chapman before the war —
he seems to take some interest
in Botany.

J. Canadensis Gay is widely the
only name for those plants which you
enumerate as acuminatus and
paradoxus; he new both forms
and considered them as varieties
which I am now forced to believe
they are. —

I suppose Juncus tenuis Mex is
= debilis, therefore pallescens, but
Decaisne has not answered my
letter about the Michaux Juncus
— so I have to do without him.

My Carte de Visite has never
been made, though many want

St Louis, July 25 1886

Dear Greg

I have not heard from you for an age. Thanks for the short notice in Silliman Journal. — But is the repetition or quotation of "since last summer" meant ironically? Is 9 months not much too long to work up a single genus?

Our quaint Judge Holmes, the conservative radical and theoretic Shakespearian writer — an excellent man, told me of his interview with you.

By the way Braun is according to his letters just as much influenced by his surroundings in Berlin in regard to their war, as you was a few years ago in regard to ours! You will now acknowledge a great many of my positions correct, while I will concede some to you. But no leisure now to discuss such things.

Unable to come to Nat. Ac. Meeting.

I have written many months since to Hooker for a fragment of J. Mengiesii, but have never had an answer — did he only neglect, or did it give him offence that I volunteered some remarks on the genera of Cactaceae in reference to his Genera Plantarum? Well with the aid of your Herbarium, which I shall return forthwith, I believe I have settled the Mengiesii business, without comparing the original specimen. I have sent Hooker & Bentham copies of the "Transactions".

Your truly yours,

G. Engelmann

Has Mann sent you further Sandwich plants?

I shall have to write to W. Booth for Isoetes.

Does Mann attend to such things? Lackermann informs me that he has written to you about a locality of Isoetes on Mystic River. How you attended to it.

Will Jimmy see I get from you or your friend?

If Bismark and the Prussians are farseeing and bold enough — and strong enough to make Germany Unity their aim, and, if in case the small potato patch princes or Louis Napoleon who fears a united Germany, should oppose, will call on the people and if need, in the Revolution, they are my men and I will overlook the form in which the war was brought on, but if they are satisfied with petty aggrandizement, and continue the trade and change in land and people I will do what I can against them.

But that is not what I am talking about.

I have now received from Roeper a fragment of P. palleseens Lam. collected at Buenos Ayres by Commerson: it has similarity with our varfatemus, but is Candrons, not yet in full bloom, and can not be the plant I have taken for it.

Looking over your extract of Lamarck I find that he says that it grows in North America ~~and~~ also in S. America and that he has specimens of Commerson.

Now, he does not seem to have seen specimens from N. Am., but probably relies only on the plants quoted from Pluk Ale & Moris Hist. [which both are probably J. tenuis?]

What he has seen and probably describes, is this Buenos Ayres plant.

I suppose I ought therefore to drop Lamarck's name and take up Michaux's acuminatus; but that is also rather uncertain, though La Harpe may be relied upon.

I am just finishing the addition and should like to put any necessary changements in it, so give me your opinion at once!

Had I known what I know now I would have said acuminatus and left out palleseens; but as it is printed and distributed — shall I still make the correction? Is it not better to make it now, as soon as possible, and not wait?

I am glad we have not been so hasty in publishing. Nymphaea tuberosa may also have to be placed with advena.

Make an Excursion with Clinton to his Boëtes locality.

Do you meet with Sartwell? Have not heard from him. — The only Junceus which I want from him now (Bigelow having got all the others) would be J. articulatus and if possible J. stygius.

Ravenel collects industriously. But his plan of collecting sets of plants for sale I can not approve, fear it will turn out in disappointment. I send you his letter. What do you say about it? I should like to do something for him.

Yours ever

Shepherd

St Louis Aug. 11 1866

Dear Gray

Yours of Aug 7th came here to day. — So the Cholera has arrived among us, but not bad as it seems; of course I am tied down here and if I would, I could not leave now, neither for North Hampton nor for Buffalo. I should like to meet you there and get personally acquainted with our old friend Clinton; but it must not be.

I had Dr Chapman here for 2 or 3 days — much pleased with him — if you see him give him my respects. Why that health and occupation prevents him to do something for my pears. He says Ellis, Rockwell and others are right before his door, plenty that I can not get from any one

New Braunfels, Comale Co, Texas

G. Langelmann

Do me the favor to send to F. Lindheimer by mail a copy of Chapman's Flora & I charge me with the price and postage.

one else.

Yes there is a specimen of Milit-aris from Wading River among your plants, but no name of collector — so that I could not quote. c'est votre faute! I'll try to amend.

Right again as to Rostock and Greifswald. Those two little Baltic universities became con-founded in my head!

Drummond had sent me Buchenau's paper months ago; — thank you. Quite interesting in a morphological point — or rather as to the laws of vegetation. Neither he nor Drummond will yet fully agree to my views of the single flower of Lonicera (Chaetocrater, etc.) being lateral — but it seems to me there can be no doubt.

Dolanden sends again sev-eral things in letters, from the California Mountains. —

Your letter of July 30 arrived in time.

Thanks for your offer of J. nodosus megacephalus. It is quite common about Detroit, Steve Bigelow gets it for me. He is as indefatigable as he is obliging. Did I tell you that he has destroyed his discovery of a new species of Nuphar, made last year. That Nuphar variegatum must go, and with it, undoubtedly N. polysepalum! Chapman tells me that his N. advena of Florida has long and narrow leaves with closed sinus, we have there an other variety and perhaps a transition to N. sagittaefolium ?? Quien sabe?

It is distressing to see, how characters considered good, taken from stigmas, stamens, section of petiole etc. all prove unavailing. — Where shall we stop? Only two species? 1, 5 sepalled, and 1, 6 or more sepalled.

St Louis Sept 19 1866

My dear Doctor

I write to you to acknowledge your letters and let you know that I shall do all I can for you when I return. Meanwhile I am very busy with my personal duties and can scarcely devote the necessary time to the investigations you want me to make. The little leisure afforded was necessarily spent with the living Scotts, ready to spirit, which I got from Scott through you. I have yesterday accounted to him for them and hope he will communicate my letter to you; there are in it also some questions for you to answer.

J. Accurate is very peculiar; that from Lutherman's Corsair, in J. Brazier's st, I know now is a good specimen, well distinguished from J. Celiaspirum.

I see in your note about Corydon, that you recommend to change proof in regard to the throwing together or

I am preparing an historical account of Scotts in U.S. and shall like to have from you and Mr Mason when and where specimens were collected. (and by whom?)

Write soon and I will try to answer soon.

Thousands wing day yet, and often at night!

Yours ever

J. Engelmann

Picking out the specimens included I find that I have an ripe fruit of curvistigma and the short pedicels are remarkable

They are also very short in mirandra with erect fruit.

Havula has not short (as you know it), but very long pedicels as the specimens show. I send better one with your fruit, which need be packed and returned soon

separating ~~species~~ forms as species.
I find notes and drawings of Congdon's made ~~[illegible]~~ years ago.
I distinguished thus:

C. aurea
- α. legitima
- β. ramosissima
- γ. occidentalis (also in mountains and also in the plains)

C. flavula — Philadelphia to Arkansas & Nebraska

C. crystallina

? C. microcentra — St Louis & Nebraska

The seed of aurea in all forms above admitted I have noted as:
seminibus immarginatis laevibus lucidis; crista conchiformi majuscula semini subadpressa

flavula: sem. rarinatis versus marginem sublente tuberculatis lucidis; crista conchiforme magna laxa semen ipsum superante.

microcentra = ~~sem~~ sem. immarginatis laevibus lucidis, minoribus; crista conchiformi minori adpressa
(very near aurea but smaller, fl. only 1/2 l. long, no spur.

crystallina seed unknown.

Crystallina & flavula have strongly crested upper & lower petals; which is not the case in aurea. I'll letter the length of spur is variable.

I copy from notes of 1860. — Tell me when you want this matter attended to, and also Napkin.

I am inclined to say:

Napkin

1. lutea 5 sepals
- a generiana — Europe
- b. pumila = Kalmiana Europe Asia

2. aurea 6 — more spurred.
- a legitima sim patente fl. luteo
- b. variegata sim olacea, fl. variegat
- γ. polysepala " " "
- δ longifolia fol. longis fl. luteis Oreg. Idaho
(this I have not seen

? γ. sagittifolia (N. sagitt)

Is not that sweeping enough?
What say you.

I must find time to review my Consolidas — tell me the latest term.

I write a note to day to Mr Ibsen. It will be too late for him to see the Viola this season.

What the Concord Scutes is, I do not know, Tuckerman's plant is v. Drummii. I shall be obliged to you for specimens of Scutes [illegible]

St Louis Octob 13 66

Dear Gray

"More sus" am I too late to do any good, and you will have disposed of Cordel's and have it in print before I can come in. Never mind, I believe I would not much change your disposition.

I was delighted to see the seeds of cuneifolia, they are so very distinctly marked, that they must characterize a distinct species. Remains only the question, whether crystallina is not the same? It has same large flowers with long spurs, same short pedicels, but I have unfortunately only a very poor specimen of cuneifolia, must have misl.d other & better ones, and can not now say whether the flower is the same.

I do not know whence you derive the name primrose;

seeds of your garden — aurea puzzled me. Very western Norfolk and Oakes Vermont seed are shining and smooth; however, all have rounded edges, not sharp like ~~[illegible]~~ montana & cuneifolia or variata, like flavula. I believe I can keep all the seeds distinct. But the length of the spurs is not constant. The western perennial west — Utah plant has short spurs but seeds & habit of Montana. — So, if you think you must give up flavula, I insist on the sacrifice of montana! This latter comes down to the western part of our State, while trinaurea seems quite eastern.

In flavula I lay some stress on the acumination of upper and lower petals, and the shortness of lateral ones.

What does Short's herbar in Philadelphia say? does he find any thing but flavula in Ohio

I had named the plant when I discovered it in southwestern Missouri and western Arkansas in May & June 1835 C. crystallina from the resemblance of the pods to the leaves of Mesembryanthemum crystallinum. You found that name in the Flora Boreali-Americana and mention it as a ? variety of aurea in F. & Gr. Flor I. 665, from Shick. I see that Nuttall had found the same in Arkansas.

I had not seen any thing of this plant until a few years ago a geologist with a few other plants gathered fragments of it in South west Missouri, of which I must have sent you some, they are without fruit.

While I am writing your great New Eagle & warrior and politician Butler seems to fire the radical heart and the hissing of rockets and the bellowing of an appreciative crowd, 2 squares off, disturb my quiet.

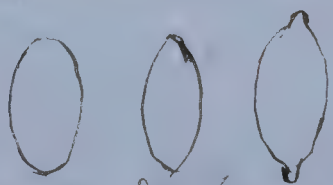
Corydalis aurantiaca. I have given up long ago, and I believe told you myself that I guessed it was a form with incomplete corolla. The only thing that puzzles me is that it was found here and in Nebraska (Hayden), and here alone, aurea has not been found. — You marked it correctly: "seeds just as true aurea" they are that, any matter.

As to flavula you make out a pretty strong case against it, but I want transition forms which I do not know. I have it from Philadelphia (Lea sub nom aurea) Indiana Illinois Missouri and Nebraska and Arkansas and even from Louisiana. — I send you a few sketches made years ago — please return some time. — The crest of petals is not present in aurea and Montana, whether in canadensis I know not. It is a mere carina in aurea & montana.

You say: "unfortunately I can run the seeds together etc." Not quite! Pick your intermediate

or Kentucky? I doubt it.

If you retain montana as a species you must keep that name, I suppose; but as a variety of aurea the name of occidentalis is preferable according to the above geographical note. Had short spurred Utah plant helped to destroy montana, but the seeds I believe I can distinguish. The respiloose subperennial habit is the same as of the Nat Mexican plant.



Seed of seed of
aurea montana flavula

Corydalis montana: subperennis caespitosa, calcare saepius ascendente flore dimidio vix longiore, seu ipsum florem aequante; petalis obtusiusculis carinatis nec cristatis omnibus fere aequalibus; pedicellis fructiferis brevibus patulis seu erectis; capsulis vix torulosis sub teretibus glabriusculis seu pruinosis; seminibus lentiformibus, margine acutis; nec carinatis sub lente tenuiter reticulatis.

Corydalis aurea: annua vel biennis; calcare subdecurvo florem dimidium vix aequante; petalis obtusiusculis superiore inferioreque carinatis nec cristatis, lateralibus vix brevioribus; ~~capsulis flexuosis~~ pedicellis fructiferis patulis deflexisve; capsulis torulosis; seminibus turgidis laevissimis seu rarissime sub lente reticulatis margine obtusis.

Corydalis crystallina: annua (seu biennis?); calcare recto flore dimidio ~~superante~~ longiore; petalis obtusiusculis superiore inferioreque membranaceo-cristatis, lateralibus brevioribus; pedicellis fructiferis brevissimis, capsulis erectis rectis teretiusculis ~~brevioribus~~ crystallino-vesiculosis; seminibus?

C. canisiliqua

Corydalis flavula: annua vel biennis; calcare decurvo floris quartam partem aequante (longitudine); petalis superiore inferioreque (acuminatis) dentato-cristatis lateralibus obtusiusculis superantibus; pedicellis fructiferis elongatis flexuosis; capsulis torulosis; seminibus turgidis (majoribus) superficie leviter et ad carinam prominentem grossius tuberculatis.

St Louis Nov 12 1886

My dear Gray

I have write go. often, but don't hear from you. Today came from Am. Soc. 3/ from you. All others received in due time.

Boott has been in active correspondence with me — and has sent many living Sedges and a new one among them, of which he may have informed you; — a very zealous and obliging gentleman — He the other day sends specimens from Pelvalke which are different from mine and prove that two species grow there (and two in Kentucky and C. Horn pond). Preserve my Pelvalke specimen well, I have a single one only left, and nobody seems to have found it since.

I asked Dewey for fruit of Nuttall's Arkansas Carpelles crystallina; he writes that there is no specimen of Nuttall's for Arkansas* (Wise rose? you or Torrey have seen it?) (See Torr & Gr. Flor. appendix). But he sends a part of a sterile and recent collection

way six months — a large ship would be, I suppose, Mertensiana the first time I have any trace of this from California — it stately bee, 200 feet high; a Prunus half as large as in Canadensis — unfortunately no flowers.

Parlatore writes that his Conifers are printing this winter, wonder how he will treat our Californians.

And now good bye — it did me good to talk a little — but write — you will find a quarter of an hour for it!

Yours, etc.

J. Sc. Newberry

P.S. Engelm. is expected since his return. How is he, what does he — how does he act?

How would it do to send me all your duplicate Sedges? I would not keep them as long as yours, but return soon.

* Wise, from Atlanta (by Chapman?) name given by Prof. Mitchell

C. parviflora * and C. Plantaginea Ref.

eg. Mother — Nidularia — that
prove to be true <u>acera</u>. I enclose
half of it for you. Unfortunately
that Ohiland Herbarium is in so much
confusion as to become very unreliable.

Another news is that Buckley, the
is certified Geologist in Texas, without
understanding anything, as Shumard
says, has published at Austin Texas
a sort of preliminary report in
which I find a botanical appendix
describing several new genera:
Schlerogotta Thouifera (a new genus)
a new Rappophorum, (another)
Calamagrostis and 5 new Panicea.

Who will find out what it is like?

I begin to get in the collections
of Jones: my friends have made
for the Herbarium accurate, some
are very nice and excellent,
e.g. Smith's & Porter's, Ravenel's
are interesting and valuable, but
often coarse poor specimens
and today Bigelow, good and
true hearted fellow, sends a chicken coop
full — specimens ft 2 feet long, coarse
— what shall I do with them ??
bend them, break them, cut them up?
How can one be so stupid — I had
almost said!

Please send over what you
have of Mann's Tuckerman's
and Oakes', and any thing else
you have for me, e.g. Sandwich plants.

Our herbarium and library room
is getting so crowded, boxes and
packages piled up, every free nook
filled up so that I can not
get at any thing — getting
fidgety and savage!

As to your fungi, I have got
it it is too bad but I will now pack
and send them, get them out of
the way and out of my responsibility.
I do not see any of the Hawk moth
specimens; you will get them in
due time, with the printed labels.

Sotonder [illegible] other
Conference [illegible] a box that has been on the

Alna, Nov 25 66

Dear Gray

I reciprocate your, & send scraps.

Porter sends Linum Virginianum var? opposite folium from Lancaster and Austin from New Jersey. The latter insists on its being very distinct.

I got to day from Durand fruit of Corydalis crystallina; of which I send you part.

pods short, "4 seeded"

seeds sharp keeled, tuberculated.

It is Nuttall's original specimen ex herb Collins, marked by Rafinesq. "Corydalis spirata"

I suppose Corydalis is long since published, but nevertheless the specimen will interest you.

I shall send to Scott to morrow Aster Anomalus and a number of other rare plants, with Mr. regard to share with you.

Will you send Isoetes?

I shall keep poking at you scraps

till I get a letter from you!

I suppose Mania, who seems interested in the matter will get all the Boston information I communicate to you or Scott.

I told you that the Cattleya fida Dawson in Echo Lake — where I have found varieties var, — two sp. in one lake — same as in Europe often.

Yours ever

J Engelmann

Lindheimer had on Nov 7 not yet received Chapman's Flora must have been lost in the passage through the mail.

Corydalis aurea, Willd.: calcare subdecurvo corolla circiter dimidio breviore; capsulis pendulis; seminibus turgidis haud carinato-marginatis ~~ob-~~ ~~tissime~~ tenuissime reticulatis vel laevigatis. — Am. Bor. orient. Manchuria?

Corydalis montana, Engelm. in Gray, Pl. Fendl.: calcare corollae (subtus) aequilongo saepius adscendente; capsulis brevioribus brevi-pedicellatis adsurgentibus vel erectis; seminibus lenticularibus margine (carinato-) acuto, cat. C. aurea. C. aurea, Gray Pl. Fendl. p. 6. p.p.; Pl. Wright. 2. p. 10 (no. 1309); Pl. Hall & Harbor, no. 31. — Missouri, Colorado, Texas. Capsulae nunc pruinosae, nunc glabrae.

Corydalis curvisiliqua, Engelm. in Gray, Pl. Wright. 2. p. 10: calcare corollae aequilongo; capsulis longioribus in pedicello brevissimo patente arcuato-adscendentibus tetragonis; seminibus lenticularibus crebrissime muriculatis margine acuto. — Texas, ~~Dr.~~ Lindheimer ~~coll.~~ no. 433, ~~(1850~~ coll. 1850, & 46, coll. 1847.

and which I take to be intermediate between celastroides & multiformis, and have provisionally named E. Coriflei — though seed seems different. 35 are miscellaneous fragments of E. pibelifer. 106 E. conduts Mayer (color by Wright) inflorescence and glands not agreeing, nor are the leaves entire but a little serrate here & there.

Those Sandwich Euphorbiaceae have to be studied in loco!

Looking over my Agaves I find a third species allied to Virginica and maculata collected by Gregg near Mier, which I call Greggii — also others from northern Mexico which I do not find described.

Agave Virginica L. lobis perigonii erectius culis, ovario ovato aequilongis tubum sensim dilatatum dimidium breviioribus aequantibus; staminibus basi tubi adnatis exsertis stylum exsertum superantibus. — Ellinois, Texas.

Agave maculata Lag. lobis perigonii erecto patulis ovario ovato duplo longioribus tubo subcylindrico dimidio paulo longioribus; staminibus toto tubo adnatis lobos aequantibus; stylo e tubo vix exserto. Rio Grande El Paso — Meteam.

Agave Greggii Lag. lobis perigonii patulo reflexis ovarium lineari oblongum aequantibus tubo ampliato longioribus; staminibus majori tubi parte adnatis cum stylo aequilongo longissime exsertis. — On the lower Rio Grande.

Illinois Dec 29. 1866

Dear Gray

Here goes Callitriche! Euphorbia bis will soon follow; hope to satisfy you.

You see that I got, unfortunately among the Agaves! Loss of time — but one must follow occasionally such sudden shines — a kind of tit bit between the ordinary substantial meals!

I have been laying the last hand on your Junci and Scirpi and am ready to send them off next week.

Eaton and Robbins have sent me lots of Scirpi, some of them of great interest, and which take away the little daylight left to me from professional duties; but I am getting through with them also.

I hate this working under high pressure as you do, the pruritus like a devil always at your elbow!

I have nothing to add to De Candolle's Genera; don't know, whether Chinopsis might not be kept separate from Prinos which then would include Prinus, Monetaea & Castanea.

Lapham's Viburnum "dentatum" has misled me; I suppose you are correct in referring it to a smooth form of pubescens with a little larger petioles. — Had never seen good seeds of V. dentatum before.

Has Chapman ever been to see you? May he be at home now? I suppose so. — You have two specimens of "Isoetes flaccida" from him — one has no good spores, the other however is perfect and proves a very distinct species! Long pond seems to have its own species — almost! — the chamiss almost become doubtful!

Another happy New Year to you. I am glad Mann took the little Solidago well — had to do the same with Bigelow and Ravenel — the Philadelphians did splendid! —

Yours ever truly

J. Engelmann

for Gray

Reexamining my Agaves I find that Torrey's Ag. Virginica Bot Bound p. 214 is the same as my A. maculata, at least as to specimens of Wright No 1905; the other I have not.

I have now A. maculosa (Hooker, maculata Engelm.!) from below El Paso, Wright, Eagle Pass, Bigelow, and "Mier, among Mezquite trees" Wislizenus, therefore all along the Rio Grande.

A. Virginica I have from Eastern Texas (Houston, Lindheimer) — & from here.

A. maculata staminibus tubo corollae adnatis, lobis corollae elongatis, basi tubi adnatis, acquantibus

A. Virginica staminibus ~~tubo~~ lobos corollae breves longe excedentibus.

Please compare Hooker's figure of A. maculosa Bot Mag. XV. 1859. t. 5122 and see whether it corresponds well, as from the description I suppose.

Mann Euphorbiae (few!)

101 E. multiformis

103 E. Hookeri, but unflowered! It is quite likely that the inflorescence changes with age. Mann's sp. are just getting into flower. I doubt also, whether the petaloid margin of the gland is of much importance.

389 Is not in Boissier, much like a plant you gave me from Wright's (marked E. 8) from Kansas

St Louis Jan 15 1867

Dear Jerry

I send have Euphorbia I hope not too late. I am now pretty much through with a great deal of business incident to the beginning of New Year, and can now go ahead a little more at any rate.

I shall to morrow box up your Insecta and Scorpions and return them. It is a shame that the former are still in my hands. I hope you will pardon this procrastination. You will find a few Scorpions which I and Brown have added.

A package of Scorpions for Mr Scott please deliver to him. Show him also your Lepidoptera for. I by him and mixed with Brownii 2 or 3 years ago. Next year the northern Scorpions especially those of Uxbridge must be well studied in Lond. Interesting

results as to the constancy or variability of species and of what we now call species may follow.

Yours truly

G. Engelmann

Will get Sporgum & Sagittaria at once.

St Louis Jan 17 1867

Dear Gray

I send herewith rough notes on Abietineae. — Hope you will excuse the jumble and wish you could find something of use for you.

The division of Pines in such with terminal and such with lateral cones seems to me correct and important; but I doubt whether the word terminal can be properly used, as only the bud for next year is really terminal.

Yours truly

G Engelmann

here send a list of the species.

* 1. S. lanifolia Lin (L. lanifolia Mich.
L. fluitans Pursh
2. S. variabilis E. add. var. pubescens
3. S. calycina E
** 4. S. heterophylla Pursh Rumpfii
5. S. graminea Mich (S. acutifolia Pursh
~~6. S.~~ S. simplex of the Botanists
not of Pursh whose specimen
and description are fictitious.
6 S. pusilla Nutt — a very good species
(if not too close to natans?)
but not allied to graminea)

But I hope to write it out in time for you.

How far have you progressed?
Drop a line — in acknowledgement of my missives!

Yours truly

J. Engelmann

Underscoring and punctuation of MSS I leave, as usual, to you

Return to Gray

St Louis Jan 28 1867

Dear Gray

Not a word from you — over so long, no acknowledgment of my missives. Hope they arrived in time and are satisfactory. Here goes Sparganium —!

When I began to write it out, I found great difficulty; want to constitute at least 5 species, but found it impossible to draw satisfactory limits; so that I had to go over the whole field again, and reexamine every specimen I have, make drawings &c; the result is before you. Whether satisfactory? I should have liked to keep the floating one separate, but can not conscientiously do it; if they go as distinct species, then all the varieties of the polymorphous Sp. simplex must

start for Themselves. For, I find it difficult to keep Sp. minima distinct; the floating forms of Sp simplex come very near it. But I think this disposition will do for the present.

Fries' angustifolia is certainly distinct from Michaux'.

Austin writes me, that he is working up Lemna for you. He says that Lemna perpusilla is nothing but L minor, but that he has a very fine and distinct new species.

Now I am just in receipt of a letter from Dr Hegelmaier of Tübingen (the Callitriche man) who is elaborating a monograph of Lemna & asks his my material.

He has L. perpusilla, (which seems unknown in Europe, as he had not seen it in any collection nor knew even the name (though in Manuel L. Torreyi flow is very rare in Europe & was not known to Steudel now) from me, St Louis and New Jersey, Austin). Even before he had my New Jersey specimen (labeled by Austin L perpusilla) he had found my Illinois plant among Lemna trisulca and L. polyrhiza, and discovered it to be a new (to him) and "morphologically as well as systematically a most interesting & distinct species" — I have answered his letter already and copied Torrey & Manuel for him.

But what to say about Austin's Lemna Cultrum? Is this plant, which he sent as perpusilla and which grows also here, is it not Torrey's perpusilla? Or was Austin formerly correct, and blunders now? Only comparing Torrey's original specimen can decide. What say you? Have you got any of it. Could you send me some original for Hegelmaier? — Or did Torrey with his perpusilla as Tenore did with Cassuta planiflora — confound other species (perhaps a small minor) with it and distribute it?

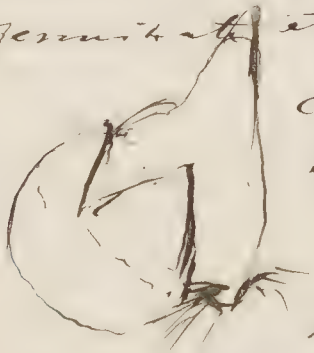
Well, I forewarn you hereby about this species and a possible blunder of Austin's. You will have to decide eventually.

I go at Sagittaria now, hope to finish that sooner, and then Juncus.

In case I should not be in time for Sagittaria I will

January! I see that Bache is dead.

Did I tell you that last fall I had plenty of a young crop of Isoetes Engelmanni; saw it germinate etc, the crusty spore coat bursting regularly in 3 lobes.



(By the way, in Manual you seem to call p. 604 Oophoridia Selaginella, that is sporocarp in Isoetes — and in this latter oophoridia is what I call macrospores.

Yours truly

G. Engelmann

I repeat my wish for a few extra copies of this Isoetes, Lycopodium, part of your Man; and, if you wish, will read proof.

have time to look at them.
Tell me about that Capsella.

I have to go over some of those Doctor again, and may make some changes, so tell me when you are going to print them, that I may be ready

Yours ever

J. Engelmann

for Gray

* applicable also to other Cruciferae

I distinguish Sisymbrium canescens from S. Sophia at once by the young pods being scarcely as long as top of corymb of flowers and erect, while in Sophia the young pods remarkably overtop them — a good and constant character*! I have Sophia also from the Rocky Mts. — Besides Sophia has a shorter and broader style, and single row of seeds; but canescens has not always double rows of seeds; there are slender pods Rocky Mts. forms with single seeds — not otherwise distinguishable from canescens.

S. incisum I would keep separate — very small seeds in single rows and very slender siliques. I have not examined the flowers of any of them yet. The seeds of Soph. & canescens are identical

I hope you have not united canescens and Sophia in Manual,

I also keep Erysimum Arkansanum & asperum separate by the very long and slender clawed almost orbicular petals of the former and the obovate or rather spatulate shorter petals of the latter, which gradually are narrowed down into the claw.

a letter from Braun just received necessitates the reexamination of some of the Isoetes. I had sent him notes about your foreign species and he writes that

Spruce, Santarem is I. Amazonica A Br.

Griffith Cabul is I. Coromandelina L. fil. or very nearly allied.

Gunn, Tasmania is I. Alstonii F. Muller (Braun) but, he says, the same is in Herb Hook from Archer, not from Gunn, Gunn's is different.

Braun does not know any Cape of Hope species and doubts whether that Lehmann plant is from thence; he could not identify the plant from my description. Sonder who has the Cuyed Cape Coll, has no Isoetes in it.

Did you ever notice the error in your "first lessons" p 96. Where Cereus caespitosus ought to stand for Mammill. caesp.

What about Wright's box and the Isoetes. Should like to see the latter!

I include a Capsella or Hymenobolus give me your opinion, whether one of Nuttall's or new.

St Louis March 14 1867

Dear Gray

The above notes have been gathering, and may now go, though you may not know

St Louis ~~April~~ May 1 67

Dear Gray

I have rec'd yesterday the proof of Juncus. Today I get a long letter from Dr Hegelmaier, who now thoroughly studies Lemna.

I have translated the more important parts for Austin and told him to send you the letter, for

I give you here only the most important results — whether to be used in your Manual?

Lemna polyrhiza common in N.S as in Europe, but always (?) sterile.

Lemna minor from N York to Missouri always as far as I have seen sterile

Lemna Torreyi Austin from N Jersey to Carolina, Missouri & Arizona

a very good species, ~~but the~~ var. ~~trianoris not~~ distinct from it, even ~~as variety~~.

Lemna perpusilla Torr from N York (ovulum & semen atropum etc) Pennsylv. Missouri, & Cuba (Wright 3215.) a good species, but Austin's var trianoris is not tenable. Occurs also in Venezuela.

Austin perpusilla subsolida and gibba Americana can not (though tenit) be distinguished from Mexico N York to Missouri

L. gibba, Arizona, Ecuador & New Granada, large form.

Wolffia Welwitschii, Hegelm. in Seem. Journ bot 1865. p. 114 from Tropical Africa & America (= W. mexicana Austin)

W. Columbiana, Karsten (botan. Untersuch. 1. p. 103 c. fig. is what Austin calls W. Delili, Orange N.Y.

In haste yours,

G. Engelmann

As I learn from Hegelmaier that Lemna gibba is extremely rare in fructification, he having never seen a German specimen in fl or fr, I send you a good fructifying specimen collected by me 40 years ago! hoping it may be welcome

all the fruits are 3 seeded

St Louis May 18 1867

Dear Gray

I have Parry here since a week; he will leave with the expedition to explore the Pacific Rail road next week, as assistant to LeConte — both as geologists. We are looking over many plants Coues Arizona &c &c. These Arizona things are not of great value; specimens mostly very poor and scarcely any thing new; but you shall have duplicates, where ever they may be of interest to you. Also of the other collections, still undescribed for a great part remained in my hands, of Hayden & of my brother. I have worked up their grasses just now.

I write principally to tell you that I have a new Mortes letter from Brava, which necessitates some changes in my paper if still in time. —

I see now for the first time a full description of the Florida Scale, floccide, and find that Chapman's is scarcely distinct from it, so that I must connect both. I suspect Braun is a little too minute in his characters and will recognize too many species (forms as distinguish)

Meissner has a heart disease & has retired; Dr Schwendener is his successor.

De Bary is the successor of Schlechtendal in Halle — Mettenius has no successor yet. His forms go to Berlin.

Yours truly

J. Engelmann

St Louis June 23 1867

Dear Gray

Your of Jan 12 is received — thanks — I have not done much in botany lately. Can you make use of the notes on Potentilla? You do not decide about the genus of the new Antigonon plant — whether Lewisia or not — the calyx is so different, 2 pair (different) of small fleshy sepals!

Glad you get in Austin's discovery about Lemna. He is at least jealous, if not jealous, the Calla of Austin's is in flower in my yard where it springs up every year from its own seed.

My congratulations for the completion of Manual!

Yours ever

J. Engelm

Feuler's "Genus monophyllum" No. 190 I take to be rather Geum strictum. The strict leafy stem and the oval fruit heads seem to be characteristic — While monophyllum has divaricate branches & globose fruit heads

Geum triflorum has a remarkable crenated fleshy disk or rather crown just inside of the stamens. Hayden got from the Headwaters of the Missouri a very pretty variety with deeply divided and more hairy leaves.

I have been running over Potentillas and find, that all those with basal style (fulvus, tridentata, argyta, rupestris) have also anthers with broad fissa commissure — the rams cells running together, horse shoe shaped*. I hope to find better characters for many or unite others.

Believe that the achenes are only not smooth & wrinkled in same species — if apparently so, the smooth ones are immature or incomplete, as others have already asserted

My P. millegrana is a good species with 10 stamens, small smooth achenes, etc

P. Norvegica has 15–20 sta and large rugose achenes, always so, when ripe

P. supina I was surprised to

* which alone, as its letters have not

find, has an approach to the spongy mass of paradoxa, not white, nor so large but smooth while the portale part of the achene, including the seed is wrinkled.

Lilian Hankins could not see it, even if from Potentilla. I do not insist.

I believe Schlemer is right — that his P. Hippiana & the new diffusa are identical and quite different from Pennsylvanica.

Pennsylvanica is a good and very distinct species, which comes also from Arizona.

I get "P. millegrana Dougl" from Bot. Garden in Germany and the same from Utah. It is not essentially different from my St Louis Millegrana: folia ternata s. nonnunquam flabellato-quinata pinnatifida ve; stam 10 achen minute pellide lævis.

a. lateriflora strict Dougl
b. cymulosa diffusa Dougl.

P. rivalis is very near it, also 10-and but with different foliage

Of Monoraspis Potentillae we have:

15–20 stam P. paradoxa Nutt
P. Norvegica L (always with large rugose seed) including P. digitato-flabellata which is said to come from the Russian

10 st. P. rivalis Nutt
P. millegrana Dougl

5 st P. pensylvanica

Potentilla Hippiana a sp Bill Williams Mountain (Arizona?) only the inflorescence — but so characteristic that I do not pronounce it a new species of the alliance of Canadensis

Calyx red inside, petals small, lanceolate, red subpersistent. 5 stamens, alternate with petals; 2 pistils! in a mass of white hair. The white hair in the centre of the red calyx, very striking. One upper small leaf shows pinnatifid form.

About the new Lewisia I have asked your opinion the other day.

Got a mass of pine pollen the other day, from South Tennessee as "Sulphur rain" — from the size of the grains it must be — conifer probably. — P. australis fall 23 Apr.

Potentilla Hippiana Bill Williams Mountain, Arizona, 5 petals, 5 stamens, 2 pistils, white hair in the calyx, one upper leaf pinnatifid, one lower entirely digitate-flabellate, the latter with the fruit, which is smooth, not wrinkled, and the seed is brown.

Alham: July 1 1867

Dear Sir:

Thanks for what you have sent me. Of Callitriche there was none of Sagittaria and Lemna only one. I have no claim on the latter, except my care to get you to appreciate Austin a little more! I would only want it, if sent to Hegelmaier please do that yourself:

Dr F. Hegelmaier
Tübingen
Germany

Send also a copy of Sagittaria & Potamogeton to Dr F. Buchenau Bremen.

I see that you leave the responsibility for Potamogeton all to Robbins. Do you approve his work? I suppose you do, or else you would not insert it.

I have nothing to say about Juncus, Isoetes, Sagittaria or

Sparganium; except that for the latter you might also have given me credit, such as it is!

But in Conifers I should like a few corrections, though they are not very essential authors.

I do not think the cells in Tsuga are confluent before they open transversely.

The anther cells of Abies do open transversely.

Larix has oval, not globular pollen grains.

It might have been said that the bracts on the cone of the Scales in Pinus become thick and spongy and help forming the bed for the seeds while in Abies & Larix these bracts remain thin and foliaceous and have nothing to do with the protection & covering of the seed.

The reference of the procumbent Juniper to Sabina pleased me much — I could never bear to unite it with Virginiana though I have never seen the fruit.

I suppose I may say that your position of sterile catkins of Abies (p. 471) is correct for Abies proper, but in Picea they have the same position as the female ones — either or nearly terminal! from the terminal bud of last year's branch. In fact in both the male and female aments have the same position, and I am perhaps not wrong in generalizing it thus:

Picea & Tsuga ♂ & ♀ aments terminal from the end of last year's branches or (often very short) branchlets.

Abies ♂ & ♀ aments lateral from the axils of last year's leaves.

I hope you will take home a good long recreation!

Yours ever,

G. Engelmann

I forgot about Potentilla. I have long been aware of this dedoublement of stamens, and have now again seen instances of it; it seems to be common especially in Potentilla anserina, which has more than 20 stamens.

In this I have seen both these cases of dedoublement. I have seen the same in Cucurbitaceae.

I have been dabbling a little in Lemna, which I had never studied before. — Austin's species are good, I believe, and Lemna Torreyi is a most curious and distinct thing, that grows also here, as well as perpusilla, which however is near minor. The true minor is flowerless, the only I possess is fl. in Fendler's 1008 from the Moro Rios.

G G

Stowe July 14 1867

Dear Gray

Never I was beginning to write German! I have that long letter of yours, which certainly is an unwonted thing in you, to go on gossipping that way! It must be that you feel an happy relaxation. I don't want to occupy your mind with serious matters for the present.

I hope you will remit now and follow Mrs Gray's advice, but it is shamefully outrageous that being within 12 hours ride of Stowe you should not come down here! I half expect you yet.

Well I now write only to tell you that I am glad you are through and hope you will next winter take better care of yourself! I know how it is, and what it is to have too many irons in the fire. I am in the same predicament, only that I have not the energy

or ability that you have, to get right at last.

Riccia arvisia I have now found in Lakes in Illinois also; so it is with your flora; also with L. minor (? sterile) and L. polyrhiza, in a chase after Nelumbium and Nymphaea. The former I found germinating, quite interesting; 4 bifarious leaves and from the 4th node the stem becomes horizontal and of the well known form, with nectified leaves etc. — Tubers of Nelumbium still present, but exhausted ~~white~~ stems and roots etc etc! Nymphaea with 3 feet long rhizoma of this year's growth. Stipules axillary short emarginate decurrent. every ~~leaf~~ petiole with rootlets behind it. Scandes and peduncles long supra axillaria and without those rootlets. Axillus very large, gelatinous (not cellular-spongy as you figure it) and seed globose — not oval as you have it. Fruit depressed. —

Don't worry about Sparganium, a good joke, you stealing from me the rich give to the poor!

Thus, then, Torrey becomes useless to science and to his friends, at least to those at a distance.

I never sent you that Lewisia but wrote about it, and wanted your opinion

L. rediviva L. brachycalyx

That is all, I believe

Yours truly

G. Engelmann

Mo. —

St Louis July 27 1867

Dear Gray

I am afraid I have missed the time of your trip to the wigwam, still I will try to scold you for not coming down here, but I can not find it in my heart to invite you in this boiling hot weather; until now it had been remarkably cool this month — rarely over 90°.

I found the Wolffin Handbook — different location, also — Illinois. Sent it to Bigelow. He now finds it also in Detroit. You should see him, if possible: 187 Larned street East Detroit.

The California Box has now come direct from New York — in perfect condition, and with in it 2 new ones among them! I am working them now and shall now finish the Fungous paper as well as Herb. normale.

I see from Silliman that Lemuel has a dozen lots of fine plants for sale

Why did I not learn sooner of that? But should I buy a set?

Why is not the new edition advertised and noticed in Silliman?

I hope you will have a good time and gain a few pounds of flesh. Cost I assure of money.

Our respects to Mrs Gray

Yours ever

J. Lewis Lemon

Rocher, the artist, left this week, to commence an engagement with Agassiz, at first for 3 months, on trial. I told him to call on you and the Botanic Garden.

Nothing from Parry since they left the Smoky Hill fork for the Arkansas; a dangerous trip.

Orange N. J. Detroit, St Louis, apparently much more common than the last. (Wolffia arrhiza Cyle & Schedf). —

You will send the vol with Weddell's paper Seemann Journal with Kenig's note — Wolff's original paper.

I want also Seemann Journal with descr. of W. Welwitschii: Seem. J. Bot. 1865 p. 114

Kenig seems to be in the dark. In J. Lin. Soc. 9. p. 265 (Jan 1866) he figures Wolffia delilii (poorly) which is undoubtedly W. arrhiza — and when he afterwards confesses that Del & ah are identical he must refer to his Delilii. but the true Delilii is every where described and figured as a flat spirit with long protruding lower lip of sinus etc.

I suppose you cannot lay your hand on Karsten Botanische Untersuchungen 1. p. 103 c. tab where Wolffia or Cladorhiza is described and figured.

I have found the other day a pond full of Lemna perpusilla var pauricostata (same as Wright's Cuba plant — all of Torrey and Austin are var multicostata Hegelm) in flower, and shall get fruit in a few weeks — if the pond do not dry up in this awfully arid and hot season — you Californians get all our rain and more than you want, we all your sunshine! We rain enough to lay the dust since July 26

Yours truly G Engelmann

St Louis Aug 24 1869

Dear Gray

Yours of 15th & 20th at hand; thanks for the curious Achyranthes. You are right in keeping me posted in all new things.

If any one is wanting Boland plants badly I ought perhaps give that sick up — if you think that they contain plants which Boland could easily replace. If not, if they are from the Mountains etc, I better take it. — Pines & Oaks he sends me every how. — All in all, you better course that sick for me.

I think I have never paid for Mann's plants. How is this? How much do I owe?

George will leave us in a week — thanks for your kind invitation. — He expects to be in Boston Wednesday evening Sept 4 and call on you the following morning.

Nymphaea is still in a mess. Flowers seed of a [illegible] scarcely recognized by you from here, globose stipitate, axillate all over — and

rhizome (2½ feet long, growth of one year!) thus far — in July — without flowers — shall examine again.

You say you mailed me no of your Linn Soc.! It has not come!

What is Wright's address?

Rothrock is at Nahant, and very well pleased — so, I suppose — he pleases Dr Gray. I am sorry to lose him — but had scarcely anything for him to do.

Vasey must be out of the Dangerous country. Writes more like July since he snuffs Mountain, Barometer down to 26 inches. (near the Sangre de Christo Pass)

Much of the party will go to the headwaters of the Rio Grande and then, probably down that river.

You think Bolander would exchange for Hr. normale Junc. — No — I owe him much for sending me half or dozen — or more Juncs in full number, some new ones have appeared again in that his expected box. — I sent him a full set of Juncineae, a few Ur. Ing. ~~Tab~~ and many botanical circulars, a year ago but am still in his debt.

Chapman writes now also, that he has got Juncus for me — but for that interesting J. Roemerianus he says too late this season — Canby got it at Wilmington NC.

I am sorry that you will send me Lemna. I am not up to that gain get. But all in a person about Wolffia.

I have now reexamined all that I have of Wolffia fresh and dry and would for the present arrange thus on N. Am. sp. but should like to see Robbins and Riddle's plants.

W. arrhiza (specimen from Leipzig & Bordeaux) flattish or slightly convex, bright green, full of stomata above, ventricose and pale below, with rather sharp posterior edge, rima circular, closely adpressed.

a. Europaea without brown spots, 20–30 stomata.

b. maculata with numerous brown dots, stomata 40–100. — Orange Co. & Detroit, with the next.

W. Columbiana Hart. nearly globose scarcely a little flattened above, uniformly very pale green all over, with very few (3–6) stomata, rima circular closely adpressed. Larger than last.

St Louis Sept 16 1867

Dear Gray

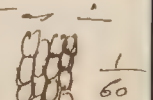
today we had a letter from George on board the Wausa 12th — seems to have had a pleasant time every where — saw also Torrey after much effort. May thanks for your kindness to him.

That Najas had the effect on me, that Pacmann's had on Braun, but I have not as many forms before me to compare, or I may make out more better. I shall send him all of it, but must beg you for some for myself. It is in good fruit. The fruit seed ought to be noted in descr. of Najas.

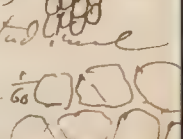
N. flexilis seed obovate oblong (Buffalo) or linear-oblong (Fresh Pond) smooth & shining

N. minor (specimen from Germany near Heidelberg) seed linear, slightly curved, about 12-ribbed, between the ribs transverse reticulation

N. minor? non American seed as in N. flexilis, about 24-ribbed, reticulated with depressed areas between the ribs and depressed dots in about 24 longitudinal lines



N. major seed oval compressed irregularly impressed dots.



I believe I have given a full account of Najas. At 3 Saints Forest Cabinet

But enough of this stuff you take little interest in — Robbins I hear long Lemna letters in your Herb. show to me what a bother such letters may be — I fear mine are not much better. —

I have written to Wright — I send regards — Yes I had — long ago — those two figures. —

You have got a preliminary paper on Marine phanerogams by Dr Anderson. Will him if you can. — I can do nothing, but will stir up Boland

What a queer note of yours — "Nymphaea seeds — well" what of my Nymphaea seeds? what is well?

Parry broke his Cal Barometer — and nothing peculiar in plants — is at the head waters of Rio Grande and is — danger of having to make detour the whole trip in Winter.

That Wolffia in your Mass is a shame — and must be eradicated root and stump !! — Lemna is tolerable.

I believe I forgot to thank you for Manual — fine copy and excellent book; I am much pleased with it; — have much to say about it, but no time now. I was much pleased at the final disposition of Cordelia, also that you made George make himself useful. Yours &c A.E.

Braun in his Najas paper says of N. minor "fruit slender, dotted" that refers to our American plant better than to my Heidelberg specimen (otherwise normal with fragile stem, reversed leaves, large teeth consisting of about 6 cells.)

Now, that Albany plant has teeth exactly like those figured of N. tenuissima, projecting of 1 brown and 2 green cells.

Stipules or rather sheath like that figured of N. minor var. setacea, but its teeth ciliate elongated.

Number of teeth on every leaf 30–40 — not 15 or 20 as Braun says it is N. minor — (my N. minor has 20–30 teeth!)

I have worked out gyrodemnae which was not such a hard labor after all as I had already studied the whole field as far as accessible. There is not much to be said about the Lemnae. Kurz' new sp. L. melanorhiza is among the Fiji plants.

The to me most interesting part are the Idolfiae, and now E. Hall also sends a lot (over a quart!) of them. I would not throw them away, so I have made specimens

enough to supply the world! Unfortunately both sp. are mixed and not easy to distinguish when dry.

As to locality I make out:

W. Columbiana pure	W. arrhiza var. mixed with Clad.
Connecticut Abbey	Ontario Pogue
Orange Co. Austin	Athens Ill. E. Hall
St. Louis Engelm.	
Illinois, Bigelow, in some pond	Detroit in one lake

What my paper is such I thought came from you, and such it being both I do not know; as Bigelow's & Hall's are quite new discoveries. It must (most probably) have come from Pogue — perhaps through you? — So much trouble for not smoking a specimen in time or not labelling a specimen.

The works you sent are very valuable to me as here interesting at [illegible] I am pretty sure now that W. arrhiza was also in Brazil, and [illegible] prove that it is [illegible] var. of arrhiza.

St Louis Nov 19 1867

Dear Gray

No I have not written to you for a long time, nor do I know, whether I have acknowledged the receipt of Berlandier plants. I know I have not paid for them and here are $60 which will pay for them and Hooker & Bentham, which I got in good order.

I was astonished to find that ~~so many~~ some genera of Cactaceae were left, which ought to disappear; such as Echinocactus, Nopalea, and probably also Pelecyphora and Discocactus.

We sympathized with you and especially with Mrs Gray during Mr Loring's long sickness and his death. Those 300 a year are a very small addition to your annual expenses, which I suppose are with you increasing as they do here

Berlandier's collections came well, except tips of plants, such

I have not seen Helianthemum in flower or fruit this season; cold winters with low water have killed it out in several of my best localities; but at more distant points it can be got yet. Will see.

I have done nothing in Botany lately. Must go at completion of Junius and distribution of Mr Normale now.

Yours truly

J. Engelmann

Durand has sent me his Vitis & I see that you are not quite right in V. Berlandieri. What you make out V. Labrusca is a form of V. aestivalis which Lindheimer has also sent; I have not seen Labrusca from Texas.

as that fine Delphinium, which were crushed and broken from by tying the bundle I suppose. The wet sugar paper ("Wright") was immediately removed and did no harm.

Well, I have another box from Parry, cost £11. – smaller but containing more and better plants.

And here you must advise me how to do. Many plants are in single sp. only, others in large numbers. I have now arranged them – no small labor, as sps of the same species were often scattered through the bundles, and will number them.

You say you want a set – not of the common plain – flow – Oswalea Lancolata, Collishaw etc. species –?

Do you want more of the rarer ones? – Or shall I now send only single specimens leaving you to order more after having seen the plants? – It would be better for you but extra trouble? What shall I do with the seeds? Write soon about these things. My time is short and will be very much occupied and now much taken up with patients so that little day light is left for botany. And the time for packing up and leaving my house approaches appallingly fast. March 1st for Sitka Date. I have rented it out.

Booth's Najas is exactly the same as Peck's, I can not connect it with Minor – must be a new species.

Thanks for Philepaea comosa; yes Parry's is a new species – Ph. erianthera – unfortunately only 2 or 2½ specimens.

St Louis Dec 27 1857

My dear Gray:

You have not heard from me for a long time. Though not so busy as you, nor able to accomplish so much, my time is occupied more than I wish, partly with mechanical botany, partly with the practice of my profession and then with the preparations for my trip to Europe. I have leased my house for a long term of years and now bought myself a nice "corner" lot about 2½ miles from the river in a part of the city that is going to be the best and pleasantest, where most houses have garden spots around them — no rows of houses, no stores — a lot of 75 feet front and 135 deep: where I can have a little botanical garden of my own, cultivate all sorts of wild grapes etc etc —

respect to Engelm. I strongly felt hard about my science and early distinctness in cultivation. —

I have now a box of Fuci from Philadelphia and one, very nice, from Chapman. Now all is in that I can expect, and their distribution (mechanical botany — not to be compared with mechanique céleste) is another task now before me — and in two months I must leave the house !!

Very good news from George — He seems to have entered into his studies with full zeal — socially he seems also pleased, finds everybody (Bancroft among others — thanks to Agassiz' letter) extremely kind.

I run to Lemon & Wolffin any day you say — but defer till I have heard from Braun — if possible. A letter from Hegelmaier and authentic specimen of Wedells W. Brasil. settle the point that we have those two south Am. species here. He also corrects the specific diversity of L. paucirostris (over) from L. perpusilla. —

And now good wishes and a happy New Year to you and yours!

yours ever

J. Engelmann

all very nice, if I was not near sixty. I shall begin my sixtieth year in 6 weeks. Life begins to be short with me!

Well, I have arranged and distributed Parry's collection. There are 245 numbers; of most of them I have laid out for you two specimens, and I leave you to settle with Parry about ~~the~~ your share of the expenses. The whole numbers 1673 sp. Parry would probably count more. His and mine and your two sets and a set of grasses for Thurber leave about 700 duplicates in very unequal numbers — generally only a few. Whether I take them with me to Europe or leave them to Parry will be left to his decision.

Prescott

I got a letter from Arizona yesterday and by Feb 1 he expects to be in San Francisco, whence he will probably return by Salt Lake. His seeds are few. I am going to sort them in the next few days and then send the whole batch with

anything in seed of Linum rigidum, the Mallow from Texas is rarely different from Sedum

your Lemnaceæ, &c.

Dr Torrey gets impatient with my delay in naming his plants. I have a mind to pack them up and send them to you. What say you? I could not go at them before my return from Europe — and then ~~then~~?

Did Kellogg bring any thing from Valdivia?

When do you want Nuttall's Lemna and Wolffia? Last term! Braun has not written yet. I see that Chapman describes in his Flora a var? of N. flexilis which from the notice of the seed, may be the new Albany plant. I have written to him for a specimen! I see that he mentions the smooth shining seed of N. flexilis. Why do you neglect this excellent character?

I am well satisfied of the diversity of V. cordifolia and riparia. The seed furnish excellent characters. Some of the ~~I have now~~ cultivated ~~progeny~~ of riparia is quite valuable — of cordifolia I know none

had no letter from him. — O, that I think of it — a small package of the Arizona seeds, superscribed in such a wonkhed way that you could not make out, were sent by you from Cambridge to Berlin for me — I have had them sent back to Kew — and suppose they come there, but too late in the season. That Montana Pinus albicaulis (which Parlatore probably justly joins with P. flexilis) was among them but was kept in Berlin. We shall get more, I hope from Prof Sewallow.

I hope to be in Florence all of next week, and may be longer — then go to Rome. Letters directed to the Care of Sig.re Carlo Kolb, banker, will reach me — I expect to be in Rome at least till middle or end of November.

My wife sends her kindest regards to Mrs Gray and yourself, my own of course accompany them. Write soon!

Very truly yours

J. Ringelmann

Give my respects to Dr Hooker, if you please

Genoa Sept 30 1868

Dear Gray

So you are also in Europe — I got your letter yesterday after a day or two before I had seen in some New York Paper that you had sailed in the City of Paris on the 5th. I had heard of a long letter or big letter that a month or so ago had come to Bonn from you, but nothing for me in it.

I guess you were worked almost to death before starting, and hope you felt on shipboard all the relief necessary after all the trouble of ~~keeping~~ cutting loose.

You must take things easier now for your own and your wife's sake. — Tell me what you are doing in Kew — you say you will stay to the end of November — will that not be too late for Mrs G.? How do you expect to go to Egypt? you sail from Marseilles, you say.

We may possibly meet in Germany in early summer. You must keep me posted — let me also know, if I can do any thing for you. — Nor are my plans definite — I expect to be in Italy till January, go then to Paris and back to Berlin — expect to be in England sometime in summer.

I am unfortunate in not meeting botanists. In these vacation times they are all out. Schultz not in Bonn, Boissier not in Geneva, Heer not in Zurich,

and now de Notaris not in Genoa !! — But I saw De Candolle and spent a few days there usefully and pleasantly — He gave me a copy of the Prodromus — does not seem to be pleased with Parlatore's work — nor am I as far as I can judge of it. The old Linnean genus Pinus — the flowers real ovaries etc — And then the old antiquated arrangement of species — beginning with Pinus monophyllos etc etc. I scarcely know, how to meet him next week in Florence — without speaking of my disapprobation.

We have been roaming about Switzerland in the most beautiful weather for 15 or 20 days, scaling mountains and disporting ourselves hugely !! I have collected some alpine flowers but not done much in Botany generally. — For the last 18 or 20 days the weather has become unfavorable we travelled through the Grisons, the Italian Lakes, Lombardy in quest of fine weather and fine scenery, but did not get either on Lake Lago maggiore the other day, the waters, rising (after terrible rains) some 12 to 15 feet, drove us actually out of the hotel of Pallanza — and here we are — not any better off!

Gray joined us some 3 weeks ago and will go with us to Florence, whence he returns to Berlin.

I suppose you know little of the Am. Academy's doings or of the meeting at Chicago — I learn that at the latter my visionary cousin, Dr Hilgard of Illinois (a brother of Julius Hilgard of the coast survey) astonished the natives.

Yes you might have given me some "news from home". What drives Agassiz away to the far west? His health? how is that? has he entirely recovered from the attack of last March? or some discontent or other, while he has laid out so much work for himself in Cambridge.

How did you leave botany in U. S. — Sorry old and you gone — Things, I suppose will have to take care of themselves!

From a letter of Bolander's also rec'd here I find that he and Thurber are not reconciled — B. thinks Th. treats him with unfairness and prejudice. Sorry for that.

Bolander says he now knows all the trees described as Californian from his own examination except a few not doubtful ones, such as Abies bracteosa, and Pinus Balfouriana. This latter he suspects may be Torreyana of Parry, and he wants me to find out from the original specimens in England or Scotland. I wish you would try to find out for me, where I can find these specimens — as in general all the originals of the Californian and Oregon Pines. — The Berlin collection was at Parlatore's and so was that of De Candolle. If they are still there next week, and if P. is not in the country like most of his confreres — and is willing to give me a full inside into all he has (temporarily) accumulated — I may do there something.

Give my regards to Dr Hooker. I hope he has received the collection of N.A. Junci which I sent him — I have

Southampton 10 a/m

Just got your letter and packing up all right; will write again ~~to~~ morrow (12 m. (we sail at 2 p.m. to morrow,) if I get one ~~more~~ other letter from you — Never mind the darning needles —

We are off now for Nelly Abby —

I should like to hear from you especially about that Money for Berlin. I hope it is all right

Good bye

G E

a few stamps for Mr Hooker, will get through George Wentworth any also

Berlin Octob 4th 1869

Dear Gray

I got your letter yesterday or rather Saturday night and amid great press of business devoted half a day to get things straight for Perry, to whom we all owe so much and who has consequently paramount claims against us. — Before I forget half of the things in the whirl of the "last days of Europe" I will write the details to be sent to — Southampton. Your letter from Perry reminds me forcibly of the difficulties of crowding too much together. I know that I put it away so as certainly not to forget in Southampton to return to you — and now I do not know where it can be found — if it should not be forthcoming between this and next Monday you may rest easy, for it does not contain much, so that I wonder, you wanted it back. — Well, to our business.

Boladon's Microscope was, I find, stopped, on receipt of ~~my~~ letter declining; if your or Perry's wants could have been in my hands a week sooner, all would have been right — but no harm as it is.

Leaving out a few things, costly and

not essential, such as magnifying power beyond 1000 or 1200, and retaining all other things, designing polarizing apparatus etc. I get the Instrument for a little less than 100 dollars Gold and have added a double lens, one much like yours for Nachet (without the table) in place of the Coddington, it just fills, as Parry wants it the ℔ 100. —

I have bought all the books that ~~the~~ you want for Parry, but a few have to be got from Leipzig, so that they are not now to be got —

Moreover I would not have the 224 Thaler to spare, being quite short of means, and expecting only in N York to have my purse replenished. (emptied too, for the good of rich bond holders, ~~or~~ of themselves, by the custom house officers!) —

You will have the money to send to Prof A Braun, Kochstrasse 22, who will pay both Guadlach for the Microscope and the bookseller for the books. Send by all means within this month, for my Due bills are due before its end —

The books, you will see I got comparatively cheap, e.g. Walpers Rep 27 instead of 32
— Ann. 43. — 54
Atendel for less than 1/2 etc —
14

You will have to send, then, to Braun for microscope and lens Attl. 143 1/2
for books — — — — — 84
227 1/2
which is about equal to ℔ 160.— Gold

The books will be sent to Leipzig to Dr Hügel, who will send to the Smithsonian for Parry and Agricultural Bureau

But the Microscope will be held here ready packed for shipment, for your order. You may request Bancroft to take charge of it, or you may request Braun to have it sent at once to Hamburg for shipment

Therefore: send ℔ 160 Gold to Braun to relieve me, and tell him what to do with the Microscope. —

The letter has turned up!

More in Bremen or Southampton.

You have now ℔ 140 left of Agriculture ℔ 300 to be spent — books! —

A few stamps for Mrs Hooker with my respects — have written to George to send some Wurtemberg ones, which she wanted badly.

If you have occasion to write Boissier, mention my package, which I did not get at Frankf or Berlin. I write to him today myself also

St Louis March 2 1870

Dear Gray

Our letters must have crossed — I have received the small parcel together with Vasey's. But as I intimated before, there must be two bundles of Arizona plants, which we looked through together two years ago. I hope you will find them, and examine the Polemoniaceæ and Crossosomaceæ. There must also be a written Catalog with them. I find a few specimens (~~Polemonia~~ Bolstemon) of them in the package you just sent.

I had requested Vasey to send me two sets of his plants for friends in Europe and it now strikes me that you may have orders from them also, and may have already sent the same Vasey's plants to them!

Cosson authorized me to buy any good plants for him, without waiting to ask; Cosson's wants also American plants, and, not as positively, Boissier.

Tell me what you know about them and what orders you may have of that kind.

Vasey's plants are not all as nice or as full as I expected to find them; some new things among them.

Those Callitrichs, are all different forms of C. verna and one C. autumnalis — the most southern locality known to me —

Equisetum limosum (not hyemale)

I shall return you some of the specimens.

Got a set of plants by mail from Ravenel to day — and a long letter from Meehan — he's a keen observer, but unfortunately not sufficiently trained — educated — and therefore is apt to stumble. —

Have written to Torrey and to Thurber — no answer. —

I have no vehicle yet — do a considerable practice — go to see patients in street cars and on foot — long distances and find no time for any thing else —

Herbarium and books ~~[illegible]~~ at Shaw's

Canby got a new Isoetes on Stone Mountain, Georgia, I.

granulata with — allied ~~[illegible]~~ forming one group with the two other Southern ones. —

Ravenel sends specimens of Viola glabra — which give me a new character: female anants and corolla, both reflexed — comes with good seeds.

I wrote you before for your paper on California plants published in 1868 — which I have seen only in your hands in Kew; and I must, of course, have a copy of it. Don't forget.

Parry keeps sending me material for Yucca and Dasylirion study: that Yucca which Torrey calls U. Draconis var arborescens has nothing to do with Y. D. and though flex for is unknown as yet, is a very distinct species, to be named "Y. brevifolia"

If I can get 2 ~~#~~ 2 bills I will inclose and thus cancel my debt to you.

You will oblige by answering the question about Cosson at soon.

truly yours

G. Engelmann

Morris March 29 70

Dear Gray

Your letter just received. I am glad those things have turned up. I am writing to Thurber to send you the small package he has for me, and please pack up the whole and send it by express. Sorry to give you so much trouble. There is no hurry about the things

Have you looked over the Erigon & Polemon. in the bundles or had we laid them out before?

Sorry to hear of Mrs Gray's poor health — she ought to have stayed in Italy or somewhere south till spring. And Agassiz is there probably past working! Is it really so?

No nothing of darning needles nor of letter of Lin Society as far as I can recollect.

It must have been at the time I stayed at Hotel, where mistakes may have occurred — in November.

I include seeds of *Agave Virginica* which may germinate with you. I send some together with a few Cactus seeds to Hooker.

Oh, I forgot; the Junci Coll please keep; either I may dispose of them, or you may for me — though as far as I recollect, I have sent sets to most botanists — either to Olney, I forget — though I think so — if not, send him one.

Those Alaska Conifers I got from Kellogg Coll, in Cambridge 2 years ago, through you.

If any one wants my Junceus paper, I have plenty of Copies left.

Yours Truly

G. Engelmann

[illegible]

Dear Gray

[illegible]

[illegible] complete. This is a plant [illegible]

[illegible] the [illegible]

[illegible]

[illegible] Group [illegible]

[illegible] complete [illegible]

[illegible] question arises what right or privilege should be accorded to Gardeners names [illegible] "Host Angel" "Host Widow", [illegible] [illegible] to such names that certainly are [illegible] out based only on cultivated and often [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Ch. contraria A Br.

1. subinermis humilior macroteles M

2. subinermis elongata divergens brachyteles C & H

3. subinermis elongata stricta brachyteles E

4 hispidula elongata stricta brachyteles U & V

(this last № 4 is = Ch. Lindheimeri A Br.

Ch. intermedia A Br. S and mixed with G formerly

Ch. aspera Willd O. 569

Ch. polyphylla Michauxii A Br. G

Ch. polyphylla Muhlenbergii A Br. A.P. 386

Ch. polyphylla trichacantha A Br. subspec. nov. F. D.

Ch. hornii is the only new species and Ch. polyphylla trichacantha the only new subspecies, in Wrights coll.

Nitella spiculifera is a new one among Ravenel's

Lycopod (Wright) is probably Selaginella Lepidophylla Spring

Marsilea Wright № 2012 (2412!)

is M. vestita Hook & Gr.

Fide A Braun

Dr Muhlenberg in his Cat. plant Am. sept enumerates 4 species of Chara from Pennsylvania:

Ch. foliolosa, Ch. vulgaris, Ch. glebra & Ch. tenuis

The two last seem to be unknown. Can original specimens be procured? Prof A Braun ~~would~~ desires to obtain them if possible. — I have written to Desvaux about them.

Chara fragilis Desv. forma debilior
Santee Canal & Pond S. C. Ravenel
No A & No C

Nitella spiculifera A Braun n. spec.
S. Carol. Ravenel No B.

I informed Mr R. of this.

Wright's Charae

Nitella tenuissima var compacta A Br. No 86
N. flabellata Kütz (N. exilis A Br.) N
N. clavata A Br. (Ch. clavata Baster) mixed with K
Chara coronata var mexicana A Br.
I. K. L 908
Ch. horrida A Br. a new, and beautiful species Q & R
Ch. fœtida A Br. elongata gracilis longissime bracteata B

Salem Sept 27 [illegible]

Dear Gray

I do not know if I wrote you last or not on a long line; nothing to write about. Summer shows no signs of leaving us yet. I have a letter from Lowell, after you visit we I get to Gardner Chronicle & other reading the first articles of June reached Cambridge August 10th. I have got an answer, he may do as he pleases but I must say that I am quite disappointed in his articles. I wish his numerous species rejected with his name based on plus or single plants not many other & probably it is as now so much [illegible] [illegible]

have spent [illegible] for them

[illegible]

[illegible] and [illegible]

[illegible] seeds of [illegible] at [illegible] I [illegible] raised to Yucca [illegible]trophylla [illegible], which is probably [illegible], but a paniculate trunk-making [illegible], and another one [illegible] out of seeds I had provisionally [illegible] intermedia, but [illegible] says is [illegible] crassifolia ([illegible] seedling [illegible] Cereus Thurberi [illegible]).

I [illegible] given a good deal of [illegible] attention to Abies. There is a long line of forms [illegible] from the Rocky Mountains to the Pacific but I won't bother you [illegible] with incomplete results.

[illegible] will make a [illegible] of [illegible] [illegible] see it here [illegible] used [illegible] in the neighborhood. [illegible] is [illegible] changed.

[illegible] it [illegible] try [illegible]

[illegible]

[illegible]

[illegible] concentrate [illegible] finishing of Polemoniaceae [illegible] Phlox will also be done [illegible] College [illegible]

[illegible]

[illegible] a full [illegible].

[illegible] there is a dreadful [illegible], but [illegible] a necessary one and I trust to [illegible] Marck's good sense and dexterity to make it a final one (for [illegible] at least [illegible]. I trust also to the progress [illegible] the German nation must have

[illegible]

[illegible]

[illegible] specimen [illegible] have [illegible]

[illegible] dead leaves [illegible]

[illegible] fragments of a specimen [illegible]

[illegible]

[illegible] larger cover [illegible]

[illegible] I have [illegible] plants [illegible]

[illegible] myself [illegible] 3000 school [illegible]

[illegible] I get a [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] seen in [illegible] and rubbed [illegible] it [illegible]

[illegible] distinct [illegible]

[illegible] can spare you a specimen.

[illegible] character, in [illegible] seeds [illegible] those Hunt's [illegible] [illegible] trips to [illegible] the [illegible] harmoniously, [illegible] make [illegible] [illegible] the same. [illegible] him [illegible] [illegible] the examination himself [illegible]

[illegible] The [illegible] ones have big seeds, [illegible] albumen. —

transverse [illegible]

[illegible]

One of [illegible] Yucca angustifolia, 1910 [illegible] seeds [illegible]

[illegible] bears fruit — [illegible] this past season [illegible] [illegible] polygamous.

Mexicans

California States.

Petersburg

Happy New Year

Coulter 697 V. Coulteri

[illegible]

[illegible] I ought to add to [illegible] about [illegible] German affairs [illegible] the whole course [illegible] policy of France [illegible] at least [illegible] XIV was to weaken its neighbours and foment [illegible] troubles among them, especially among the Germans, [illegible] take sides with one party etc. This machiavellian [illegible] is now also stopped, though Thiers and [illegible] thought it the greatest political wisdom.

[illegible]

The [illegible] of [illegible] good characters [illegible]

Carrick Cave
Salem of the [illegible] Plant Lind. 673

---

present of the
any additions in it!
manual ed. 187[illegible]

[illegible]

[illegible]

[illegible] still more [illegible] Mellichamp of [illegible] material [illegible]. Unfortunately [illegible] Constitution [illegible] Chapeau [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Manuel?

[illegible] two months ago!

[illegible] collected [illegible] Exhibit. [illegible] Horse, drum, shot, [illegible] cotton [illegible] shot.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Moorish [illegible]

[illegible]

[illegible]

[illegible] 1871

Dear Gray

[illegible] shall be [illegible]
[illegible] context
[illegible] Thanks for your Quantic
but where is it from? from Jardin?
I know the species, but wanted [illegible]
[illegible] plant to ascertain the
geographical limits. I have from
[illegible] Jussieu & late "Lafargue"
[illegible] and here. Unusually
early species flowering & flowers and
an egg't, which only happened once in
19 years (very [illegible] & [illegible] life.)

[illegible] paper on Sirdepity has
made me examine it, and I find
every thing confirmed, only a little more so.
There is however a misprint or lapsus
memoriae in his article for the sheath of
the vessels in the centre of the leaf consist
in all Abietineae of cells free of chloro-
phyll, as any one can readily see
[illegible] glass. [illegible]

[illegible] Bast-Bundles
[illegible] it, remarkable
[illegible]
all [illegible].

I [illegible]
[illegible]
[illegible]
[illegible]
excellent [illegible]
[illegible]
[illegible]

I had [illegible] specimens [illegible]
[illegible] U. aloefolia?
with leaf [illegible]
[illegible]
[illegible]

[illegible]

[illegible]

[illegible]
[illegible]
No Botany [illegible]
[illegible]

[illegible] 13 [illegible]

Dear Sir [illegible]

[illegible]

[illegible] least [illegible]

[illegible] day.

[illegible] preside at [illegible]

[illegible] ever here? [illegible] with [illegible]

[illegible] labor [illegible] sent to [illegible]

[illegible]

[illegible] will [illegible]

[illegible] of [illegible]

[illegible] be [illegible] then [illegible]

[illegible] I have [illegible]

[illegible]

One [illegible]

[illegible]

[illegible]

[illegible] Chesapeake

[illegible] S. Carolina.

[illegible] it [illegible]

[illegible]

[illegible]

[illegible]

[illegible] will have to

Compare yet [illegible] 2.39 [illegible]

Will have to make [illegible] certain

before I offer any correction for

Manual. The western [illegible]

[illegible] generally [illegible] often

[illegible] South Carolina vulgaris [illegible]

[illegible] short spines.

Thick joints, pale green coloring,

[illegible] short yellowish. Bristles distinguish

it. ~~[illegible]~~ ought to get a plant [illegible]

garden [illegible] Schott [illegible] to

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] your letter to Mr. [illegible], and that Mr. [illegible] of [illegible], though [illegible] may be late, seems to be a reasonable sort of man. Hope we will be able to get those seeds.

I [illegible] very grateful that Opelia [illegible], but I [illegible] [illegible]. If you can help me, tell the [illegible] [illegible] [illegible] be placed on the [illegible] European gardens, we will probably not be able to learn, whence C. vulgaris was originally grown.

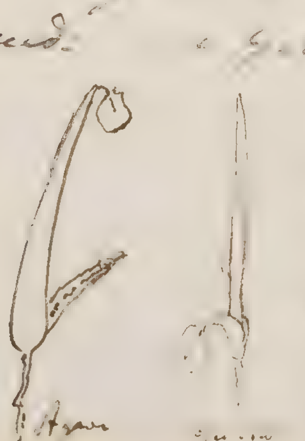
No, thank you, I have the Northern Queen's now grown at Earl's (from you) and at N.Y. (Leggett and N. Jersey (McKean). You can obtain the true vulgaris, now (to my Notion) from any or other

[illegible] in [illegible] — [illegible]
[illegible] in [illegible] [illegible]
[illegible] for [illegible] Carolina [illegible]
in S. Carolina. [illegible]
[illegible] matter.

[illegible] start [illegible]
[illegible]
[illegible]
[illegible] anthers [illegible] perigone — [illegible]
[illegible]
[illegible] in Eng[illegible]

My Sugar Maple is just coming
into bloom, apparently single as in wild
plants, but pedicels 2 or 4 flowered!
(it was transplanted from the woods)

Yucca & Agave have very similar
seeds & germinate very [illegible]



By the way why do you
knowing better still use the
nomen falsum "radicle"
for stemlet?

In Yucca: seed in earth
stemlet and cotyledon small,

[illegible] 3 [illegible]

Dear [illegible]

[illegible]

the [illegible] of [illegible] ! [illegible]

[illegible] a [illegible] !

[illegible]

[illegible]

[illegible]

thought the name of [illegible]. [illegible]

which he then [illegible] adopted, [illegible]

changed into R. Obs. pusillus, as

minor implies a comparison

which nobody will allow.

So you see, [illegible] prejudice [illegible]

[illegible] not [illegible]

[illegible]

[illegible] enough [illegible]

[illegible] to criticize; but the

description itself must have

[illegible] you.

[illegible] you [illegible]!

[illegible] as: "Generous [illegible] ...

[illegible] especially [illegible] before [illegible]

[illegible] *Caroliniana* [illegible]

Hibiscus [illegible] different [illegible]

[illegible] says that [illegible] are perfectly separate [illegible] the [illegible] of it. All specimens [illegible] I have a number [illegible] *Caroliniana* [illegible] *G.* [illegible] *Caroliniana* [illegible] from [illegible] it is probably [illegible] specimens [illegible]

I [illegible] that [illegible] *Drummondii* [illegible] *Compositae* instead of [illegible] it up [illegible] but it will be [illegible]

[illegible] have it [illegible]

[illegible] must [illegible] for the press.

[illegible] the [illegible] dwarf forms [illegible] among them [illegible] may be [illegible]

[illegible] to [illegible] hope the box has safely [illegible].

Have you Oersted about *G. aquifolii*. It is probably [illegible]

[illegible] with [illegible] thanks

[illegible]

New Orleans Oct 1st 1871

Dear Gray

I believe I owe you a letter since I heard from you. I am not quite certain whether I owe it to you or not. I know.

I have not done much in Botany since the Pacific Railroad has given out and the fever, though the latter was temporary, received the other day by the receipt of a Stylosa in full bloom from Salem Oct 1st. I remember to have seen it bloom in the fall near Spoleto in Italy. Does our Cay ever fruit? Is it an anomalous period for flowering? I will have to find out.

But this leads me again to the particular plan of Gieseras & Gray's "Depauperate" anthers & the fertility of them in general. I am still of the decline of Gieseras view as contrasted with the Wadsworth & Gray conclusion in regard

part appear, on those specimens that grow on the tops of the cane, were just due flowering, while those on the part of the branch in 1870 are full of fruit, I conclude therefore that they matured the flowers in the first season and matured the fruit in the second season, the seed all ripe, and this at 24 months after flowering. Is it any so very, flower or rather fruit on the bi-annual plants? or is that a monocarpic plant? Still more odd yet is Lonicera! Do they produce flowers every second year, after the maturation of fruit?

I have said to the contrary however.

Very truly

Your friend

[illegible]

[illegible] vagett. calycina recommended as a colossal specimen in the city in stagnant water on the Mississippi banks — certainly unusual unfortunately to be destroyed from Cholera fear. Ground to be filled up by order of Board of Health. Adieu Sapitaria! You shall have specimens!

[illegible] Conrad Sprengel, Darwin, [illegible] Z. He has not investigated [illegible] and speaks in other plants of the effect [illegible] allied authors at the time [illegible] flower opens. We know that the [illegible] of Yucca are well developed [illegible] pollen [illegible] before the flower opens. What becomes of it? All Yuccas are in Europe sterile except Y. alorifolia? [illegible] and many others, (some wild ones in Texas here) are sterile. Are the necessary insects not at hand? Must try to find out next season. But that is not what I wanted to write about.

Can you imagine that Old Bob Peck has found the Arenthobium in New York on Abies (which he sent me) negro? I have not heard of any on Abies yet. What it is I do not yet know. It is a minute thing a few lines high, but full bearing [illegible] subject up again. [illegible] I am [illegible] revision [illegible] genus [illegible] Europe [illegible] and [illegible] look it entirely and do not know [illegible] there is any thing new in the [illegible] since 15 years.

Has Ayall [illegible] however [illegible] Idolaader [illegible] ever collected any? If so I want a full specimen as I can obtain. Will you help me?

Peck has and only female specimens. And there is an interesting fact connected with them (!) Why did only female specimens (15–18) spring up on the branch before me? Are there some seeds in Dioecious, Cl. 5, which produce in preference one or the other sex?

Arenthobium (as undoubtedly all its allied plants) germinates on the green and tender twigs of the spring, [illegible] therefore must shed in spring.

In my N York plant the interesting

[illegible]

[illegible] Dr. Gillies [illegible] all [illegible]! I always found in large colonies if one is the other sex.

I & Dr. Arnott found Drummond, Douglas, Lyall, Mitchell, Bourgeau, Hall collected only males, & only Bolander & Parry also females!

I took pains only females at first, afterwards after diligent search found also males.

Cincinnati Nov. 15th 1871

Dear Gray,

Though you are such a poor correspondent & have become so cold, I can not help bothering you with a letter, perhaps oftener than you like! But please do not be after imitating Bentham in his "parsimonious" ways with his correspondents, but [illegible] continuing our old friendship, would it be offended if someone would presume to call me old? I for to had a very kind and nice letter from him a few days ago.

Now to business, for you have no moments leisure to read anything else but important matters.

Your package has safely arrived many thanks for the specimens, as also for Wright's Cuban. The species were important to me especially on acc. of Bourgeau's Mexicans. Wright's the most western one I have seen, and really an Pinus Banksiana; it is the same as Drummond's Bolander's & Hall & Harvey's on P. contorta! [illegible]

Nuttall's A. Americanum, since
this comes next to Oxyria's of all
[illegible] but is mostly [illegible]. I do
not know how Eichler could have
got them [illegible] gathering or [illegible]
in America. But I learn from him
another interesting fact, new to me:
that Oxyria [illegible] is one of my
plants! I must try to get a specimen.

For our distinguishing among Arcanthobia
life & species in New York A. minutum
would go for one.

Why does Eichler spell campylopodium
still? I think wrote —podium and think it
right yet. If campylopus would not be better
[illegible] your philologists?

Christian Conrad Sprengel
born 1750 died 1816 was Rector
of a Gymnasium, College, & Spandau
near Berlin, a botanical amateur
and a close and acute student and
observer. His great work you find in
Vribel: The discovered secret of Nature
in the construction and the fertilization of
flowers, Berlin 1793.
He was an uncle of Humboldt, who was
born 1766.

I do not recollect to have seen
the book, as all events if I had
not start investigation seems too

early; [illegible] fertilization
fertilization of flowers. Flowers
[illegible] so many [illegible]
plants do not bear seed and I do
not know yet whether that is always
the same plants [illegible] and whether that
are fertile or sterile. —

Look out for Eichler's
[illegible] side [illegible] adapted
[illegible] Eichler.

[illegible]

[illegible] complete [illegible]
[illegible] — Arcanthobia [illegible]
[illegible] Should [illegible]
a good [illegible] or [illegible]
gradually [illegible].

Please hand the enclosed
Prof. Drewer: Have [illegible]
Dollcanum Scina — Bot Herb
which Torrey supposes to be [illegible]
[illegible] Cornus.

[illegible]

[illegible]
[illegible] — [illegible] [illegible]
could have had [illegible]

3003 Locust St St Louis Dec 3rd 1871

Dear Gray

"It never rains but it pours" So do my letters to you and so do the Arenthobium letters. This morning with your letter there came also one from Mrs Lucy A Millington from Glens Falls with all about the "growth" of Mr Leggett. She found it in two counties in N.Y. Seek in a third. I return Leggetts note. I had written to him about the plant a few days ago. But enough for the present of this plant — only one question. Is what you send is "Seeds, a branch of a larger specimen?" with several lateral and one terminal fruit. I will return the Essex Co growth as soon as more closely examined.

Meehan's supposed discovery of a new conifer made me examine the whole element of all I could lay hands on — Williams, American robusta and Meehani.

I see this that, because the leaves are unlike, I have by Clayton and per both forms.

But drop the Linnean name T. polyspicata & adopt U. conspicua or U. polyspicata.

No time to add the notes on Conspicua but do so next time

Yours truly

C Engelmann

Give my George for Vienna

pleased with the people many Americans stay to have good rollicks, & compare with them in regular order teachers etc.

Give my kind love to pleasant family

in fact all intermediate, even generic characters. Can you only use to other genus, or segment in such, & [illegible] & say other & wise? — I indeed you will find stuck up the bracts (bractlets) of the ♂ forms. Buckley's plant evidently belongs to C. Avellana.

When was that Viscum (Loranthus) published? Thanks for the sketch underneath I recognize Torrey's writing

Enclosed some valuable Yucca seeds I will send a set also to Kew, had a disappointed note from Clover a day or two ago — Wagbox seems to have arrived. Wilson wants Yucca from Oakes.

Fact character of Yucca sprouting is, I fear, not a quite permanent one. Your sprouts from the Arizona will bloom in 2 or 3 years. Sprouts, or rather branches from between the upper leaves presuppose a sort of a trunk. All the caulescent ones do it of course. And what Oakes and Carrière call gen. filamentosa, and what I have from S. Carolina does so also, I see however that Linné's plant is based on Gronovius Vir 152 with the diagnosis "foliis lanc. acuminatis"

while Baker's filamentosa has just the reverse "leaf concave at apex" and more obtuse than any of Yucca. The tradition is certainly in no doubt in favor of Baker, but I must confess I can not reconcile the foliis acuminatis with it

I recall one of the bifurcated vulgaris which we examined together in the Fin. Herb. in London. That was undoubtedly our V. coniifolia a male flowering specimen. What have you resolved about it?

Clayton in Gronov Vir ed II p. 34 names two species in Virginia 1 no 696 and is evidently = rotundifolia Mx ~~[illegible]~~ on the other hand Gronov refers to Laburnum L in Vir 152 which I take for coniifolia Mx and which Gronov refers to vulgaris L. (correctly as would appear from Lin. Herb.)

3003 Locust St. St Louis Dec 22 1871

Dear Gray

Your of Sept 6 received. Thanks for the Coryli — very interesting forms, but is that really Columna! All of them are peculiar, [illegible] form [illegible] [illegible] California or Mexican Coryli?

It seems Sollenanen is no worse for your plant.

The latest Arenthobium discovery is that all arenthobia are compy Coposis, & that cyptipodon is the young state!!! There are certainly different species but it is difficult to catch the characters. I shall keep your Fichlen Cornutti [illegible] little while.

I get to day — leaves and a young plant of what Caricière and Bukard (though he says: point not pungent) take to be the true Yucca filamentosa, and that is cultivated as such in European gardens. I send you a leaf from "Fort Wolte", in the red clay country of the

Conjunct [illegible] compare the two [illegible]
[illegible] Please compare [illegible]
[illegible] 277. 278. and Bot Mag. 900. — The latter
I see at Shaw's and it represents this plant.
Baker in Gard. Chron. p. 923, Dec. 1870 considers
the same and it would suit very well for Maximiliana
Carriere — the S. Carol. Leaf

But at other it is Linnaeus' plant
"foliis lanceolatis" [illegible] is a great [illegible]
[illegible] I don't know on that disposition
Linnaeus relies. He seems to have taken
all plants mentioned by his authors with slight
[illegible]. [illegible] Allen 369 [illegible]

Thanks for the notes on [illegible]
[illegible]

Old Perry is really [illegible]! I
had a letter from him to day. Going to Gardners
port!

Please hand enclos[illegible] to Drewe

Yours Ever

G. Ken. Allen

The Cayley Column you want is almost
too near C. floribunda but it may not blend [illegible]
[illegible] I will send you sketches
[illegible]
[illegible] to copy [illegible] sketches [illegible]

[illegible]

[illegible] along the edge of the leaf. [illegible]

[illegible]

The material [illegible] complete [illegible] scattered [illegible]

[illegible] only the [illegible]

[illegible] caused [illegible]

[illegible] 3003 [illegible] Dec 27
71

Dear Gray

[illegible] just get your note
dated Dec 22 [illegible] your
meanwhile [illegible] one [illegible]
[illegible] with crypt. & campylo
[illegible]
[illegible]
1 [illegible] [illegible] seeds
[illegible]
[illegible] minutes
2 [illegible]
[illegible]
[illegible] not yet
[illegible]

Another character [illegible]
[illegible] to be adopt [illegible]
[illegible] which [illegible]
[illegible] larger [illegible] Oxyg[illegible]
[illegible]
[illegible] must be
early spring [illegible] all others late summer.
And other [illegible] characters.
[illegible] suspect it is monocarpic [illegible]
[illegible] years.
[illegible] Yucca seeds
Shall I send you a package of seeds for Hooker? I do not know how to send such things from here.

I believe also that the number and arrangement of the bundles of vessels in the stem will remain characters.

Oxycedrus

Cactus

Cupressus

Pinus, and most of them.

Can you send me any thing about the anatomy of the Coniferous stem? Not doubt trouble you about this; not important.

28th I just get a letter from E Hall. He says he has plants for sale, which he might give to distribute, and among them an Arenthobium on Pinus grandis. Do nothing, however, to me about it, I can get plants, or a new genus or an old species.

I should be much obliged if he might give me would send me the Arenthobium & Phthirinaceae at once, to be returned. I shall want a set of Hall's plants besides (seeds, and if possible the common one)

Yours truly,

J. Engelmann

I shall send the Pinus seeds with Hooker's together, as soon as I hear from you

[illegible] I have not heard of any other species of Lion species Cubensis, [illegible] as a learn, [illegible] chance I shall probably comply — Thomas "perspicuity" is not among Dr A. Gray's preeminent qualities; but let that pass.

I must write to Hall about his manner of making specimens. He says he intends to collect more next season. He must try and do better.

"Willd. (ex Pursh): Yucca filamentosa foliis late-lanceolatis stigm. reconditis petalis reflexis" — It is evidence Yucca [illegible] — How has Willdenow got that? Elliott leaves out "late-"

It seems that Gronovi plant is quite a different species. Linn. Spec Plant. 2nd ed. i. 1. Yucca foliis serrato-filiferis — Difficult to say, why serrate, unless the youngest short filaments near the concave tip of the leaves are compared to serratures.

Yours truly

J. Engelmann

Winter early and hard

3008 Locust St. St Louis Jan 8 1872

Dear Gray

This morning your letter, this morning the package! Gift! Dipsacus — wish I could add: readness! but oh — what an idea — to slice small twigs and [illegible] for [illegible] — horrid! Hope the other plants are better — or I wish to be excused from buying [illegible].

The Isoetes Nuttallii, Braun, is excellent and the fir-mistletoe! Oh looks so distinct, not like any I have seen — but how characterize it? — They are really different things. It seems now to me as if A. Oxycedri had a structure of wood different from any American species, and if I am right, quite peculiar.

Wright's decumana have the [illegible] Cuba of 1865 — there is nothing new among them, as the two species represented have been sent by him before from Cuba

I am that Sc. pub. Cordy bean will be my, a [illegible] there is any reliance on [illegible] or your specimen. [illegible] Thank you and [illegible]

[illegible] is not small [illegible]
[illegible] that [illegible] enough to
identify the species, and
you [illegible] Calocarve. And I suppose
you [illegible] them..

I have ransacked all my Lindheimer papers, but can not find such a list of Woods specimens. It is barely possible that it is out at Shaw's where I have, years ago, brought the specimens themselves (yet boxed up.). I will look as soon as I can.

By the way, I have no letter of Lindheimer for 10 or 12 months, though I have often written; but know, from his papers, that he lives. I will try to stir him up in a month or two, when [illegible] may be collected.

Why that broadleaved Yucca is generally accepted as Y. filamentosa I do not know, but thus it is. *

No Hurry about Redouté or Trew but I wish you would ascertain some time or other.

* May it not be the same with Opuntia vulgaris? What I take to be such, occurs common in Europe, in cult. and naturalized. while possibly it may not be the original plant.

I must have given Wright the names of his older Cuban [illegible] years ago. If he should not have them I can write them out again for him.

I am glad that you have concluded to lighten your labors and hope it will be done satisfactorily. But can you remain in your house and Herbarium in that case?

"Perspicuity" is a good word!!

Mr Julius Hilgard of the Coast survey has applied to me for a recommendation of his brother Theodor H. for Parry's place — As Parry is now out of

but your connecting the pinewoods publications with the N. Labrador seems it almost certain. That you must look for them somewhere else, as I never had the Cotter work.

— I have looked up old papers, and find that Sept. 19 1865 you write "the box would bring, contains all my duplicates and keepsakes. Also Mayer's Insects & Lepidoptera (the appendix is in Linnaean Laporte) I have not & never saw."

So I had Mayer's Insects from you!

From Feb 27 1867 you write: "The box of Insects etc is here. Mamma has unpacked it & have not yet found time to look the contents which no doubt are all right."

The "etc" I hope and expect, means Mayer's Insects!

It is now midnight — looking over the old letters I forget the hour and was quite absorbed in the old times. — I suppose you don't preserve old letters, or else you might to find from me one dated 2 Feb 1867 announcing the contents of that box!

The Callirhoe you did not send, but I have a fragment sent by Hall in a letter last year. I make it Q. marginata Torr.

J. Brown wants Cordy Marcellin for it. Hall says he called on Mr Westcott largely and with ripe fruit, please send him the best fruit there is, as Hall desires me to ask you.

Somebody wrote me you would south for your cough but your note is from Cambridge. How are you by the way?

Forest City Iowa Missouri March 2 1872

Dear Gray

I have been such a delinquent correspondent for a few months past, and have since last month or more neglected to write altogether, I am afraid I have not even announced the arrival of Hall's plants. Have I?

I shall send you the whole package back — better packed, than you sent it me — with a few notes. Also the Arenthobia from your Herb. & Eichler's Loranth. Brasil. which was very useful to me though it contains errors. Also Brewer's Lonicheras.

I have had Hall here day before yesterday on his way to Texas, & I tried to direct him a little.

A letter from Lindheimer containing a few seeds and promise of more in spring. Poor writer that not [illegible] have

me he has in his report named it Arenthobium pusillum — I answered that I had no objection, if my name mentum were used in publishing. How is it with Mann's Catalogue?

That Hall's plant may be considered a new species: A. abietinum. The characters are difficult to express, but I think I can do it.

Buchenan says that Aliquer subulata, Jones Orig 153 is Sag. Hanii pusilla. Just are the facts and probabilities? He therefore names the plant Sag. subulata.

Watson says you have A. stellatum sent from the pine-wood. Did I never send it to you? I have off and on collected it since 28 years on the edge of Rocky Glades of the Mississippi, and have it growing in my yard. Do you want it "living or dead"?

Why don't you adopt Ranunculus obtusiflorus in your Manual? I have to add to Gibson's notes on it, that large specimens have quinate leaves, and may possibly connect with my ole ? pentandrus with railroad reaching, but Gibson's may not be obtained more easily.

I forget to ask also for Hall's Scirpus and Carex, if there are any I should like to see specimens.

Have not yet found list of new species but will send when it turns up.

There is some mistake about your Meyer's publications. I do not recollect to ever have seen the R. Labrador, and as to the Juncus & Lingulae, I have the manuscript dissertation from Fuchsmann and the other publications from Buchenau in Berlin to settle with Rothrock & Delahanty. Whether I ever had them from you — perhaps before I got the copies from Berlin — I do not now recollect, but am certain that they must have been returned if they ever came in my hands —

myself got it on the Ohio Riverbank
in Mr. Finney's pasture in Tennessee,
[illegible] I would like to see a male spike
on their farm. Can you help me to it
on 6 pin oaks, in Mexico & California (Mexico)
I trouble you a good deal about
things which at the moment interest
me and may not [illegible] "noblesse oblige"
you know, and also it is in your
interest as authors of the future
Flora of North America to have all
such questions sifted.

I asked you the other day to send
the best fruits of Hall's Quercus
vestita to Brown, Berlin, who
cultivates them with great success
but has no North American one.
Can Hall to get for him
the Texan one.

As you resign you will
have more time [illegible]
[illegible] give work but can
you give up your home? or
[illegible] you have it? Who
would be your successor?

Yours truly,

J. Engelmann

Will you write again?

[illegible]

Dear Gray,

Have the receipt
for the box of plants. It contains
1. Eichler Loranth, which has been
of great use and very suggestive
but not absolutely true always.
2. Jones Arcanthobia, Liberman's etc.
3. Brewer's Loranthaceae
4. Hall's Abietinae etc.
5. A jar with Persimmons for Kew
(they have been well soaked in Alcohol
but I have now poured it off
for fear of breakage – you ought to
fill it again (if you think proper)
for the fruit, now full and plump
is apt to shrivel if too long out of
the liquid, and to loose its proper appear-
ance. You will find a label with it.
They come from two different trees and
are different in size and number
of seeds. Please send it, when
you have an opportunity.

I have written to Watson about Abies and asked him to show you the letter. You can be of service to him in one way, by pointing out books etc. Murray's character of stomata and their arrangement does not hold out; but ought not to be entirely neglected. Do you know any thing about the white dots (resin) about the stomata — can it be a secretion from the stomata themselves? I must examine, when the young leaves come out. You have seen Debary's exhaustive paper on inex secretion. (Bot Zeitung) He has not mention Conifers at all.

That Abies grandis and amabilis question must now be settled, before we write out the Californian Abies, and I dont think I have material enough to definitely settle it. But one of the drawbacks is that Douglas original cones can not be found. They used to have passed into British Museum from Lambert's sale, but are not there.

I have now Humboldt's original Aceratum vegetatum from Berlin — can now get settle some doubts.

So Debary goes to Strasburg, where he finds Schimper, the palaeontologist.

I have been studying Rhododendron and find that R. flavescens is distinguished from R. ponticum (of which I have an original Berlandier specimen and one of Greggs) and R. villosum Hutt (which both are identical) is nothing but the form of leaves and the presence but we have also short and roundleaved smoother ones and in Wright's & Brewer's specimens all the gradations of pubescence and size. Look at Brewer's (returned in the box) — I guess, however, that all the male flowers of the true northern narrow leaved glabrous flavescens — first and

pectinate or curved up at the [illegible] I was pleased to see, as I have in Illinois gathered specimens with the same variations and have suspended these things long ago. It is important in regard to our Grands. We have there quite a number of varieties mostly geographical, of the universal western species — varying more than pectinate because size of cone and shape of scales are varies considerably. Such is not the case with the European plant. The Rocky Mountain form extends from those mountains to the Cascades, all the others from the Southern Cascades to California.

Some forms of California have also stomata; but Pseudotsuga plan. is all in lines both of stem & leaves.

Late spring, Elms & Acer dasycarpum just beginning to bloom.

Sintenis has sent a few seeds — seems to wake up, but one can not expect great things from him.

Yours truly

S. Engelmann

Gray

Does Vitis Caribaea not come in South Florida? There is no specimen in the Herb. Torrey. Unless this Vitis osiriana is a very different thing and may be = V. candicans of Texas and Lower Mexico, we want the company.

I think you have in Dr. Cambess an instrument maker, who makes knives with a stand, like my pruning knife, for dissecting — What name, price etc. Somebody wants them here.

Shoreham Sunday '72

Dear Gray —

Yours, just in

463 Euphorbia glyptosperma Engl.

464 E. serpyllifolia Pers. foliis angustioribus, seminibus distinde sorbiculatis.

465 E. supina. foliis latioribus seminibus obscure sorbiculatis.

May not send Callitriche bits at the same time?

Yes, the letter carrier of my district proved a blackguard and stuck letters away — scores a hundred were found after his discharge — yours

[illegible]

among the number, but Callitriche do not turn up — destroyed by him?

(I imagine it was sent by Hale to me from Oregon in a letter

Asterella Wallichii in Hooker's Icones is published, grows in damp soil but not in water — spongy places in mountains living water — [illegible]

It is distinguished by the [illegible] volume covering the entire [illegible] P. Roughly ridged, but slightly (microscopic) dotted? microsporous.

Corrensbrien I am not quite satisfied about the species yet; find now a distinction in the stomata some showing them only on the outside of the leaf-organ, (cupula), others open over the whole stem — I have not yet ascertained, whether this difference is connected with other essential characters.

That Mirey I would take for A. Lapillanii, but find mine

that in the cone and other respects approaches Mengiesii — it is in fact intermediate between the two and again, from the former always distinguished by its narrow triangular leaves, — such I think, do not occur in any form of Mengiesii — nor any transition.

You may call this Arnottii or Aristiteum until I can satisfy myself about the species it will have to bear this name either as species or variety.

Yes I will give you a short Latin abstract, as soon as I have time.

I have received from Dr Christ of Bâle some papers published by Carrington in which I find that he distinguishes as geographical varieties Mein pectinata, Apollonii, Cephalonica and all the Greek ones; of which only the first form has acute, obtuse and emarginate leaves

[illegible] the stomata of the thallus [illegible] and not of the [illegible] [illegible]

[illegible] Around the St. Louis [illegible] 1875

Dear Gray

I send the att. dry a long Miss's letter to Cincinnati [illegible] see it probably — My investigations go farther, and it seems that that Sect. Fe (Cincinnati [illegible]) the conclusion is to play an important part yet: a good species and the widely distributed one

How my moss name got abroad I can not imagine. It seems that Lindley took it up, when and where I do not know — somewhere about 1853 I suppose at least: that year the name appears in Gardeners Chronicle.

As to the words [illegible] that in future it will not be a [illegible] or a [illegible] which in hundreds of cases is not attainable, but simply the leaf [illegible] will let us recognize the species:

St. grandis, stomata only on lower side of leaf — (very rarely towards point of upper side [illegible] [illegible]

[illegible]

[illegible]

I will try to send you the enclosed seeds and also to tell you that I need an Allium stellatum bulb, hope it will reach you safely.

Yours [illegible]

[illegible]

St Louis April 7 1872

Dear Gray

I wrote this morning, and now hasten to answer your just rec'd.

Thanks to you and Watson for the Rhododendron Rich. business. Had I known that the plant was so very different from ours, I would not have troubled you or myself about it. Bob somebody suggested that it was a form of glaucescens! perhaps induced by the note of New Mexico, which I thought scarcely collected anything like it — did you? In case I have not seen any Texas.

Hillebrand should have to study these plants. Seemann's descr. like all the old ones is very poor, and the plate good for habit (except the very grossly lower!) but the arrangement of flowers in it is abnormally given. Bentham's sep. fl. 2 × (3 – 7) sensitive

on the more mature bit. Seemann's is the [illegible] one?

Yes as I have 600 [illegible]
[illegible] will in [illegible] days I get it
done — or never or buy like 100 of
other [illegible] — "till I get time
to arrange them" is [illegible] — so
it matters not much how the figures
are !!

Tell me how much I owe
and where to send the money.
I have asked a few Q. questions
but you choose to ignore most
of them!

Any botanist in Florida? Have it
Chapman? Have his herbarium?
Is his successor as active &
intelligent man? Is [illegible] in
a good [illegible] or any thing
botany?

You know I am crazy about Yucca
I have not been able to obtain
a decent sp. real Y. gloriosa!!
or the real Utica Cactus has not
been found in Florida!

Yours ever

J. Engelmann.

Very windy, but he done got Parry's place.

Arcuathotaxis — unique — all others are
autumnal. And the cones are still green
as before, & the dry. is
a perpetual riddle! — the most very
young or 3 year old branches, & probably
most always dying off. How rare!
Mesocarpia! Jerry Cox, of Sandy Hill,
has promised to search
etc. also. You look in California!"

I had a letter from Torrey also
who knows nothing of Chapman.
Have to give him up, as a pity.

While I was hunting for
mole Phor. flavescens a lady-
friend brought me a lot from
Alabama all alive, so that I could
stay them to my heart's content.
There is a regular transition to the
Mexican & Oregon forms.

These sections of Lorranthus
stem may — perhaps open, those of
Arcuathotaxis — some other time.

I inclose a fragment of bluish green oak
wood from Maryland. What is the color?
I can not detect any acid out
change the color, nor any chlorine.
Dash does brown it but acid restores it.
Do you know anything about it?

Yours truly
J. Engelmann

Cambridge April 25th 1872.

Dear Gray

Look, you the trouble
you have taken about those California
pines — but then the trouble is
in your own i.e. the North Amer.
Flora's incorrect!

P. Californica, Lorbl. is no doubt the pine
now called insignis, but only a cone was
sent home "from Monterey" & "Santa Cruz"
(the locality of insignis) was poorly dried
and the seeds very erroneously compared to
Coulter. Your plants raised from them
seem to have lived in France and England
until about 1840, but were never fully
described — & must come back to insignis.

Your hint about the stomata
hunting on other leaves is well
applied — but don't hurt! I
think it is well to find out the
minutest characters, if constant —
not always to distinguish species by
them, as you would mosses or fungi.

hard to judge from such characters of the value of the species. But the stomata are not microscopical in this & can be seen with any loupe or even a good eye. It turns out, however, that this character is not a constant one and can only be used to a certain extent. Thus I find them on the upper surface of some A. balsamea cones & on others not, nor can I discover any distinction in their form or that of the sidemen's cells. The white coating is also wax, not resin for Bolgard

By the way, that A balsamea you sent me 1864(?), with long exsert bracts in the young cone, must be something else. I will remind you of it in case time you may look out for it.

The others are a hard set! At all events — and I wish in your proposed California trip — yes, and in your Bot. Gard also you would have an eye on such things — The fertile branches often bear leaves. I generally from those of the other branches — Hall's Oregon, Parry's Colorado specimens will prove it too — & I have put aside for you a specimen of A. pectinata collected by me 2 years ago in the Rheinwaldt Wald, with very short leaves on fertile branches a fact which seems to have been overlooked by most authors. Christ mentions it however.

May 8th

The box has come, but not opened yet as place not cleared. I suppose it contains the 680 specimens — Dash at $8 makes $54.40 for Dash. I have sent today a draft to Mr E Hall, as you desired.

Hall sends us a cactus from Texas in seeds, which proves to be his own C. melanopus. Therefore with wide range!

Mr Pringle sends spring flowers

Abies concolor (Lindl.) Lindley was published in Gordon Pinetum Suppl. 1862. It seems to have been published earlier by Lindley in Penny Cyclop. which I have not been able to verify. It is of same importance as Murray's magnifica (1863) (the same a variety of A. amabilis from the Olympic Grove) may turn out to be the same. Neither of them is as old as Douglas's grandis which is a form of grandis.

I suppose it will be best to retain the name concolor, but note that it was published by Lindley, and not by Gordon! Murray! It is perhaps Ob Calif. etc. [illegible]. There is again a question for Watson to find out about publication. The Oregon Com. (Balfour?) I suppose was the first to figure the present plant (1853); but Gordon's perhaps the first real publication. A copy of that Gordon page would be of service — could Watson or Brewer be kind enough to furnish it?

As concolor is the only one I have been able to see from Santa Fe and Lake Tahoe, I have [illegible] collected any Abies. None in Boundary Report.

Concolor is a very good and distinctive name

I did not know how Hartley got hold of it, as I never published it.

[illegible]

Hartley will with his brother leave for Europe in a week or two — has sold every thing.

I told you, I suppose, that I had delight to unite Phor. villosus & tomentosum with Ph. flavescens.

Could I get a copy of Sessnan's design in Fl. Mexicana Bot Herald? or a fragment?

In closing this I get Torr's Report which does not give a word about Arenaria, though he gives a list of plants found, "new to the State" and another, "new to science".

specimens. Have the Cows not much more Cibe Mexicanii ?
[illegible] a form between albo & Mexicanii but I agree with you that it has nothing to do with nigra.

[illegible] a month or two [illegible] to California and Peru, [illegible] put him on the scent of A. concolor [illegible] will [illegible] plenty of it.

[illegible]

[illegible] since [illegible] you! [illegible] that [illegible] I forget [illegible] your [illegible] modation and gave us a [illegible] unfortunately a rainy one so we could not go out to Shar[illegible] but looked over a good many [illegible] here. He might have given me part or [illegible] day was unfortunately for me a Sun[illegible] so I did not see him at all that day. [illegible] consumer, as Miss Mary [illegible] provide. — [illegible]

[illegible] I [illegible] that [illegible] would have

[illegible]

[illegible]

names it [illegible]

[illegible]

Remains to be [illegible]

[illegible] amabilis

seems to [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] cultivated [illegible]

[illegible] Within 12 years that "Magnifica"

was introduced, [illegible] plants of

[illegible] seen in Edinburgh,

[illegible] grounds [illegible]

[illegible]

[illegible] California and Louisiana

[illegible] 40°

[illegible] color [illegible]

[illegible] foliage [illegible]

[illegible] none other has turned [illegible]

[illegible] New Mexico and Arizona [illegible]

[illegible] Watson's amabilis belongs [illegible]

[illegible] the question is, whether

[illegible]

[illegible] it [illegible] we have small

[illegible] foliage of cone-bearing branches — nor

foliage of younger California trees.

I must defer decision, but incline

[illegible]

[illegible] Conifers [illegible]
[illegible] have compared with
eastern species: Pinus contorta
[illegible] Banksiana and P.
[illegible] with P. strobus. They
are [illegible] or geographical
species. It is interesting that
[illegible] northernmost Arctic [illegible]
[illegible] of the westernmost P.
contorta [illegible] (S. Saskatchewan) [illegible], Oregon
and California [illegible] Tonda [illegible]
[illegible] Sierra.

Arctic [illegible]
[illegible]
found in [illegible]
Banksiana, but collected
I now get from same region,
C. pumila "a tree 60 feet high,
2½ feet in diam." The specimen with
half mature fruit can not be
mistaken. But still I doubt
a little about the size of tree. What
myself saw, were, however, our

common narrow form of U. ciliatum,
the broad-leaved one I sent you in spring.

It is difficult to identify the poorly
[illegible] old species. I can [illegible]
[illegible] (Gard Chron) and
[illegible], [illegible] gives a [illegible]
mostly verbally Haworth ~~[illegible]~~ suppl. Such
I do not have but should like to
[illegible]. The difficulty is with
U. glaucescens pubescens & flavida
[illegible] suppl.
[illegible] Bischoff's cones are
still [illegible]; [illegible] returned
[illegible]

Lindheimer writes that he has colle[illegible] different seeds — but that don't cover [illegible] you now! he has given up his [illegible] and [illegible], 67 years old, as well [illegible], on a more pittance.

By the way, 1851 he wrote me (I preserved the letter, because he gives in it a minute account of A Texan Ghosts), "I saw such you in [illegible] 1850/51 [illegible] with the leaves 7 feet high. Do you recollect anything about it. It is a plant of shade, singularly enough, I never got specimens from him though in the letter he describes it very plain and well.

[illegible]

[illegible] just re[illegible] Oct 6 [illegible] really distressing [illegible] and fresh [illegible] that is it [illegible] allege [illegible] time ago. [illegible] broadest sense, i.e. east of Rocky Mountains. The [illegible] green and [illegible] exotics [illegible]

[illegible]

[illegible] seedling pushes
[illegible] a stout [illegible] stem, 1/2 – 1 inch
long – [illegible] perpendicularly down.
[illegible] up an Orizona [illegible]
[illegible] third year, with this stem
nearly as thick as a finger, 8 inches long, with a club shaped scaly
termination, rootlets from the
[illegible]. A stem growing
straight down in how deep
[illegible] the?
[illegible] expand short?
[illegible] rose till [illegible]
[illegible]
Do you know anything [illegible]
i.e. [illegible]

My brother sends a Celtis
with very hard and rough leaves
[illegible] for Mt. [illegible] if
[illegible] in common.

From Palmer's seed [illegible]
Astragalus somewhat similar in foliage
to Canadensis, and decumbent, large
flowers in spikes – just appearing.
[illegible] will be
next year. –

Also Malacothrix Macrorrhiza
which is just [illegible]

Yours truly
[illegible]

We are busy with Uvula
[illegible]
[illegible]
[illegible] Lobelia!
[illegible]

over

St Louis Nov 28 72

Dear Gray

Many years ago Dr Behr of San Francisco informed me that the Chinese there were cultivating an edible (imported) Sagittaria which had become naturalized and when I requested specimens was informed the Irish Dirt displacing moles had covered the mudholes where it grew. Your letter is in fact I can see it again.

I tried to trace up S. chinensis in Herbaria and found only two specs, 1, the Kew, "Beechey's voyage" with large head and very short fem. pedicells which is probably, therefore S. sagittifolia, 2, the Asa Gray Loo Choo Wright, with very slender elongate fem. pedicells, and acute lanceolate bracts. — What that is I do not know. — You must compare the original figure in Bot Mag. 1631

if he [illegible] & [illegible] are [illegible]
shorter than [illegible] which it is like
with S. sagittif. — Buchenau, I see,
takes it as a distinct species, under [illegible] I do not know
At all event specimens in flx fr
are desired from San Francisco!

You know that S. variabilis often
makes such bulbs which no doubt
are rich in amylon "arrow root"
and [illegible].

Did you get the San Francisco
Mfr Comes etc which I returned
near two weeks ago?

Sorry you lost by the fire
personally. That Harvard has
lost a good deal I have seen
in the papers.

I had Fanny here for 24 hours
but my time almost absorbed
in [illegible] ! too bad!

George is now I suppose
in Eng. & on his way back,

So you will finally resign!
I wish it was so that with
your youthful vigor combined with
matured wisdom you could
devote yourself [illegible] to the
flora.

Had a letter a few days fr.
Hooker acknowledging box
of specimens sent 18 months
ago!!

Had also a box of live (and
dead) Cacti from the West Coast
from Agassiz. Good things,
Nuttall's Echin. viridescens among
them, [illegible] or Thamnocaria
or II San Diego flora.

We have smallpox enough
but happily no horse epidemic.

Fanny's new gentian is
very good, finely characterized.

Yours truly

J. Engelmann

Gray

Aster ptarmicoides with its whole habit, diff leaves white corymbose flowers and especially unequal pappus, longer fibres slender — is a Diplopappus with simple pappus! Hooker now places it with Diplopappus.

But you have noted all that already, I see.

St Louis Febr 14 1873

Dear Gray

The above has been written long ago for you, but I see unnecessarily. The enclosed sheet was written for Hale and has not yet been sent — so I send it to you, and when done with it, you may send it to Hall. He has sent me some Euphorbiaceae which I have not named.

Some time ago you sent Lilium Sagittarii from California. I can not distinguish it from canadense. I enclose you few seeds of Sagittaria. That Beckey Lilium is no, be a good Sagittaria?

I had heard from Mary of your sickness; did not know that Mrs Gray was suffering. Is it some-thing like the attack she had when we were there Apr 1868? I hope milder weather will soon relieve them. But this has been a terrible winter!

Too early I have been such a good from walking to small, [illegible] the [illegible] [illegible] [illegible] [illegible]

George has arrived in New York and from him I heard of Sorrey's serious illness, but that he was getting better. We expect George in a few days — sorry we did not go to Boston & Cambridge but he will in a month or so probably return to the eastern States for a month or two, before he definitely settles here.

Somebody has sent to me (Hooker! Darwin! Sowerby!) that sort of Rhododendron with yellow pitchers — good or fair as far as they go but not satisfactory at all, but good to identify forms in. I am astonished that Baker (in the Kew school) admits so many florists species! My S. Carolina forms keep haunting me and I can not yet decide what to do with them. I don't want to describe forms as new species, when there are so many bad ones already.

I will write to Hooker about those pines. No, Sorrey is older than Cephalotaxus.

Let us hear from you!

yours truly

G. Engelmann

Gentiana sect Pneumonanthe

seminia aptera
ovata

- G. ochroleuca

elongata

- G. sceptrum [illegible] brevior
G. calycosa sem. longior, cellulis minoribus
G. Pneumonanthe — cellulis magnis

seminia vix cristata brevia

G. frigida J. C.
G. glauca H. G. Gray
Seminia anguste alata elongata

G. triflora
G. Andrewsii
G. Clustii
- G. puberula
G. Saxonii

parce latius alata

- G. Parryi
- G. Saponaria
G. alba
- G. affinis J. E.

ovata late alata

G. Newberryi

seminia orbiculato alata

G. asclepiadea cellulis sem. longioribus (immat.; solum ?)
- G. purpurea " " orbiculato-angulatis
- G. paucifolia " " " "
G. punctata " " " "

those marked — are perfectly mature

ovw

Febr 26

You see from the above, that the seed of Pneumonanthe is very peculiar and we have nothing like it — that calycosa is very different from Parryi, more near sceptrum — that glauca & frigida have about the same seeds — that affinis is distinct — & puberula, to which it seems allied

I shall send you in a day or two the documents, i.e. seeds stuck on paper, to compare.

yours truly

G Engelmann

I have sent this morning or last night
Gentleman's Lig & letter.

the winged seeds are usually
acute at one and obtuse or retuse at
the other end,
G. Elliottii is acute at both ends
G. Purpurea obtuse " " "

St Louis March 9 1873

My dear Gray

You are either excessively busy or excessively lazy. Such a falling off in your correspondence, it is like Sorry or like Braun. Do our friends come dead for us, many years before they are buried, and many, many years? I hope it may be yet.

The other day I got a package from Cambridge, Alaska, plants — & other things — but not a single line announcing them! Many thanks especially for the Alaska set which come nicely with Hall's Arctic set, which I have only opened a few weeks ago! & the box as well as in the last bundle I find many interesting things; pity that those plants of Wright's (Pacific Exp'l Exp.) had been lain

Was shocked at your portrait in Gardeners Chronicle a few months ago. One would not recognize it. So better send a late new photograph!

In the same publication an article on Conifers at Dropmore vividly reminded me of our rainy visit there and old Frost and his yarns.

A man spoke of Linnaeus Pinus leaves 7 feet long, but 4! So much for Calligraphy; it is Y. Freculiana Carr. = Y. Conspicua Buckly.

Have you settled about S. Sagittifolia? Buchenan acknowledges it as a good sp. but evidently does know it. It might be = sagittifolia; the California plant is variabilis. Buchenan's S. papillosa from Texas I have known long before him but hesitate to recognize it as distinct.

Yours ever

C. Engelmann

is long, partly injured. But that reminds me badly of the nice sets of Lindheimer's of 1849–1851 which have never been distributed. You and Hooker are the only men I've got sets. I myself had not yet incorporated a set in my collection!! (Do these then are many dist. sets [illegible]!)

Dr Leiber, 71 years old, is reviving. Has sent me seed provider Liverpool. Says he has sent you things.

And so we have George here again after 5½ years absence in Europe. He is seen as a man, and nearly, heartily glad to be at home again. I'm his beloved Missouri. And jealous and well educated in his profession, he makes the most favorable impression on every body.

He couldn't see Torrey, who then was too sick; but expects to go east again and spend six weeks or so in your eastern cities and their hospitals and among their medical men. Then I expect he will see you also.

We have spring weather after the severest winter in 40 years (but one, 1855–56); hope that you and Mrs Gray are also reviving and recruiting.

I see Wright's handwriting on the labels of many plants. He is still with you; remember me to him.

Fendler, you know, came to Missouri, but [illegible] as sick fit and left to return! and to a more genial climate than Missouri!

As soon as Contions of Walkers & Hookers Genera is out, I hope you will get for me a copy also.

So you are at work at Gymnocarpa again. Glad to [illegible]. And Tuna Flora?

Kilton April 16 '73

Dear Gray

What I would want of Lemon Article was

vol 7. 1858 p. 580. 579
8 1859 p. 308 473. 488 555
9 (1860?) p. 20 212 222 359
(10?) 1861 p. 303. 369
(14?) 1865. p. 55
about Cereus tuberculatus,
and the plates

I should be much obliged if you could send them, soon and promise safe and speedy return.

I wish to take the best set of phanerogams (214) don't care about ferns.

Do you send plants? Cosson, Boissier, or Hegel, I mean plants that are offered for sale? All these had expected me to look out for

such sets for them.

The Genera are now printing but I am not pleased with the work — i.e. with my part of it. If I ever wrote better I am not doing it well now — (getting old?) too broad, too much circumlocution, and so I loose interest and zeal in the work that drags along.

I hope you have found spring in Washington. We had summer for 3 days, and see now flakes of snow again.

I believe I told you I had a letter from Hooker asking for more conifers, information and capsuliferous also — the latter I politely declined — not up to it!

Yours ever

G Engelmann

St Louis May 20 1873

Dear Gray

Three letters from you in one week! I just kept quiet and waited — but no more would come! So I have to answer!

The fact is that with medical convention, awful house cleaning, several changes which Georgie's advent necessitates, and last but not least the printing of my yearly paper — I am entirely unfit for regular work. The latter paper does not satisfy me, makes me ill humored etc etc —

Thanks for the Catalogue of Hall's Texas plants. So there is only one new thing, that Silphium — Among that acquirements — He, to judge from his letter, must be very learned, but perhaps a little volatile or dissatisfied. I have spoken about him to the Super. of our Public Schools — do you know any thing about him (where they think of introducing the study of Nat. Hist.)

And the Mexican plants you propose — best set of Phenogams — named!

All in a hurry

Yours ever

G. Engelm

hope you are all well by this time — cold wet spring here.

Miss Fred was also short lived flowering specimen of S. nutis. I believe Mr Brown would name M. coarinata — they are too close together.

How did G. Gerrate get into the beat? I thought it was much more western. Must write to him. I know that he found that form of G. augustifolia which I name very dubia.

Hall is full of hybrid oaks, a little too much so.

Well, I must do without Camissy Yours as best I can.

For my I owe you $28.—
Gen Plant II. 1 7.—
$35.—
which I transmit by P.O. order.

But I remark that you charge me with Am. Assoc. for 1870 $3 — I find that I paid to Lovering in May 1872 $6. — & March 1873 $3

However, those $3.— may be for former dues which I cannot now trace up.

Had Tony here a week ago — gone North West.

Sandberg is in Philadelphia evidently brooding over some great discovery in cosmic physics — guess. He must have been disappointed in Europe.

I am doing nothing — will be glad to finish up Arenthotium some time this year — Slow work.

Yes, send up box, but I am afraid I can not appreciate those foreign plants, have too many already, bundled up and stowed away for better times.

A Dr Maack, from Hannover, now at Agassiz's, has applied to me for a place here, where he can make useful his talent, for

St Louis Jan 9 187?

Dear Gray

Your Abies has been received — no, it is not Fraseri, neither is it the regular balsamea — it seems a transition between the two, invalidating the species. To get better data we must obtain entire specimens of both.

Can not your thousands of men (and women) of leisure and culture, who spend months doing nothing in the Mountains etc: will none of them gather specimens?

I got Gilman of Detroit to look after balsamea on Lake Superior, but he got only male specimens! and cones of alba with them (not on them) I cannot get done with Yucca yet — but hope to finish this week the long agony.

Just now comes your Letter of June 3d etc.

Shall write again, when the box comes and when I have examined the Albion paper

Yours truly

G Cupples

Wish for full grown cones of your Albion balsam — they if they will grow this season

St Louis Jun 14 1873

Dear Gray

I got your package yesterday. Thanks for the "Genera" Some changes from the ordinary accepted routine are startling; others I would have expected, and was surprised not to find.

Sorry that the Mexican plants are to a great part not named — I have too many unnamed Mexicans from Gregg. — There are fine and interesting things among them.

Does he <u>live</u> there and is approachable? Such men could do a good deal in the families, which will never be well represented in Herbaria: Cacti, Agave, Yucca

A note from Watson asks for Oenothera albicaulis var brevipalpis & trichocalyx. I find among

Wililjenus collection only single, but large specimens and may spare a branch for Herb HBS. Cant.

Now for the „Note sur Abies" I take it to be entirely worthless. I have spent weeks examining into the distribution of stomata, but could not discover any constancy; perhaps good to distinguish varieties by — and often scarcely that. I have copious memoranda and drawings.

As to the canals, he is probably as wild as in the stomata; but I have given this no attention — will perhaps do, but expect nothing.

His ingenious explanations of the turning of Abies leaves with upper stomata on lower and Picea with them on upper surface is wild — nor are the facts correct.

If he had examined more specimens he would have been either corrected or made wilder yet; as it is, he evidently had seen few or perhaps single specimens only —

It is amusing to see him place the old Pinus Abies DC as a variety or synonym with A. Nordmanniana, ditto, ambigua with Fraseri.

I wrote you a few days ago — repeat the question, what is A. Fraseri? Only an extreme form of A. balsamea? You have in Hb a specimen from Vermont which seems to come nearest to Fraseri and look distinct enough but your Garden plant is a transition to it. —

Yours truly

G. Engelmann

I shall return your Bulletin together with some seeds etc. etc. You can find it.

Illinois, May 5 [illegible]

Dear [illegible]

[illegible]

[illegible] young fruit of a Yucca [illegible] plant [illegible] with [illegible] I requested him to send you such capsules with the direction to deposit them under your Yucca plants. The worm will gnaw through the capsule and hibernate in the soil, and the moth next [illegible] fertilize your flowers.

I have more [illegible] Yuccas, nothing very particular. But I have learned (which I ought to have sooner, if I could have got the Rhododendron from your Boston [illegible]) that Yucca Treculeana capsule named 1858 [illegible] described before 1863 while Y. canaliculata was fig. [illegible] 1860, so this seems still more [illegible]. I am glad of it.

Moreover, I have [illegible] a doubt but the new species of Y. caroliniana — as well as Shaw's here are from Lindheimer's seeds which I distributed 24 or 25 years ago and then you ought to have plenty too. My plants of Y. [illegible] of the [illegible] age [illegible] grew large.

Are you vegetating?

We have a pleasant Summer, not too warm and are doing well.

[illegible]

[illegible]

If you have a spare copy of your note: Sommerni in Silliman Jour., please send it to Dr. Hellichamp [illegible] S. Carol. [illegible] no doubt would enjoy studying these plants. S. variolaris or flava are there

if because of its locality — it is a genuine character; no degeneri is given); it is of course a good sp.

This is, I believe a list of all the Arenthotiniens I know.

I often now a days give such hint about discoveries, because I may not live to complete and publish — Moreover I do the letter, full plates must accompany the because otherwise scarcely intelligible. —

My own former attempts, and again now Eichler's, show how incomplete material and too much faith in verba magistri instead of self investigation, lead us into perplexities and errors. Your struggles also! Many the magistri is here also Hooker — in Fucus Linnaeus! — among the misled (half) is myself! I know now only the fid. of Y. globosa and its plat. thin cells — note my doubt, implied & expressed in my last letter! page 10

Yours truly
J. Ernstedt
Mr. Watson
Cambridge
Mass.

St Louis May 22 1873

Dear Mr Watson.

I have two letters from you. The first you answered yourself, so I need not say more than that you are right about that Callithamnion heterophylla forma submersa Grevillei — It has been taken for antennulies at least a thousand times! and is easily recognized even without fruit.

I had Gray's whole distribution circulated here, so what you sent has already passed inspection.

Eichler did good service in Arenaceous. but he did not know Arenaceous. — full of errors, the most amusing one to me is the recognition of my A. cryptopodum, which I had given

grown up myself long ago — as soon as I knew that all Art. are cryptogams other gray, and complicated with nature. — But I wrote to Gray about those things 18 months ago on the return of Eichler's monograph to him since he had loaned me.

Eichler did good service in establishing U. regularis HBK as an Aroniellobia. I had, since original fragments, enough to verify the thing. It is so.

The question about species and specific distinctions must remain in abeyance. I was working them up industrily a year ago, till other occupation made me put them aside. They may be taken up again ~~xxx~~ next fall.

No species is better established than A. americana (Saskatchewan to Oregon California, Colorado

Wyoming)

Oxycoccus has nothing like it in America.

The sp. on O. pondeosa I have not named yet — may be called obscurum or robustum; is very good. from N Mex, Arizona, Calif Oregon — Colorado mountains.

The vaginatum seems to reach into California

distichum may belong to this though it has characters of its own

Divaricatum n. sp. Sandberg on P. edulis & Arizona

rectiullatum n. sp. Mexico

Guillemin Peck (I do not know why Gray says that Peck sufficiently characterized it to establish his name;

weather would kill them — 22° 8.8
not injure them here.

You do not mean to say that you "have not got college work off your hands till August" — (1874?) Who is to be your successor? Goodale you mention; who is he?

I return Ascherson's letter. It is vastly better chirography than his ordinary letters — so I preserve it as a fair specimen, but not an average one.

I write to Chapman about his foster mother. Have you specimens from Florida?

My wife sends her kindest regards to Mrs Gray. She found last summer and this past one too severe, and we are talking of Colorado and Gray's Peak — May be that will cool us off.

Yours truly

G. Engelmann

I see that Rothrock is out west.

St Louis Sept 11 1873

Dear Gray

I ought to follow your example and wait 6 or 8 weeks before answering! But I must return your Ascherson letter and besides, have some things to tell you and, above all, have more leisure, i.e. my time is so cut up that I have many half hours which I can ~~only~~ only conveniently employ in such matters. May be, that I do not understand the wisest employment of time:

Ascherson wrote to me at the same time and the same things. A Kepler of J. H. Gard left here a month ago on the Coast survey up the Pacific. I think he will get Phyllospadix and the like for you. At least I instructed him and he promised well. — You ought

to send a notice of Ackerson's discoveries at Regent to Silliman or some other journal.

I have got your cones — fallen to pieces. Wrote to D. Brunet, Quebec but no answer — is he still there? — Have you ever seen at Balsam Cone of the size you allow in Manual and Mickaney figures?

I believe it was after my last letter that I got from D. Schott Washington a sp. of Y. gloriosa, the first ever seen by me. It justifies my conclusions drawn from the ovules — the seed is not at all like that of aloifolia; thin, flat, but not apparently pulpy — must wait for its maturity. —

I was expecting your criticism on my Yucca paper — why does it not come?

I got a paper of Karl Koch on Yucca the other day which amused ~~me~~ much and shows how little is known about Yucca even by such well read horticulturo-botanists. Somebody in France had told him Yucca were brighter in the light of the full ~~moon~~ moon and he therefore calls them Moonflowers, disregards the nerve & inflorescence; and that the flowers open at night he did not know — As to the species there is great confusion; though some good hints as to some cultivated forms. —

But what astonished me more, really pained me was a paper of Regel's, just received, on Vitis. It is marked flippant ignorance, throwing together the woolly ones (labrusca & cordifolia) and the smooth ones (cordifolia and, oh! vulpina (stark) Bäsler is a hybrid of these two principal species.

Glad you got the bugs to move your Yuccas now to do their duty to posterity. Hope your

St Louis Nov 23d 1873

Dear Gray

Many thanks for Bentham's admirable treatise on Compositae, I read it through with a great deal of pleasure and instruction. Glad to see some of my ideas about classing, & DCandolles classifications are being realized, leptopod cannot be to be. Our friend Shultz is nicely put down.

My friend Mühlenberg is on another scent. It is the oaks now, which he hunts up (or down) with the same zeal and acumen as he did the Quercus and Pinus.

We have established an interesting fact that there is in S.C. a „Running oak" probably the true pumila of Walter and perhaps of Michaux Sylva, which is by authors placed with cinerea or with phellos, but which is a very distinct thing! with annual fructification. Therefore Michaux' figure in Sylva

Another Mem. about Quercus: You quote in Man. "Q. pumila Mx" as syn. of Q. Prinus var humilis (= prinoides) Q. pumila is the "running oak" of S. Carol. but Q. Prinus var pumila Mx is ~~that~~ the synonym ~~of~~ you intended to quote. E. Hall says, that in S. Kansas it grows 1–30 feet high! — In southwest Missouri Castanea pumila becomes a large tree, much the vesca — but distinguished by the tomentum and the nut. When I first saw it in 1835 I took it for vesca — but have now satisfactory specimens.

You suppose (p. 453) that Q. trilobe rather belongs to nigra. Specimens from S. Carol & S. Illinois seem to place it with falcata — but I will see again. Q. Michauxii also comes from S. Carol. looks rather different from any of our prinus forms. — but Good night, yours ever.

G Engelmann

with small, pedunculed acorns on last years growth is wrong, represents some thing else, or is a figure made up by the artist. The foliage is correct!
Now, the larger leaved forms resemble cinerea so much, that it is impossible to distinguish them in the leaf — but the fruit of one is biennial, of the other annual. I recollect that G. suber and pseudosuber are distinguished in the same manner, only — Could this character vary? DeCandolle rightly put virens among the annual fruited sp. but Chapman don't!

By the way Chapman wrote me from Apalachicola, sending a new Georgian Scarlet. He hopes to make a living there.

I fear to return to the Oaks
Mr. finds and sends also G. nigra! it which seems very rare — and has been seen by Jesup (vide DC. Prod.) it is biennial, and apparently very distinct.

He sends also a plant, which is possibly G. sinuata Walt and may be nothing but a large-fruited and large-leaved form Agrifolia — but looks quite peculiar.

So much for the present about oaks. Of some of them I have duplicates for you if you want of them.

I must have written to you that Scott at last discovered the fruit of Y. gloriosa, thus far probably seen by nobody: Elliott, Nuttall, Chapman all took the fruit of aloifolia for it. I had found the ovules of gloriosa so different, that I suspected another kind of seed, and here it comes from the Bot. Garden of Washington! Y. gloriosa is not a Sarcoyucca, but a Clistoyucca. To satisfy myself and others I got Scott to have Photographs taken and I send you a copy herein.

3038 Locust Str St Louis Jan 6 1874

Dear Gray

Thanks for the paper. I am sorry you had such trouble with it. I send you a check to your order and hope the paper will come soon. I am well pleased that it is strong, and rather pay a little more for it. But I really want only 12–15 reams — ordered the 20 for future use (I am 65 next 2d Febr!! what future?) and would have no earthly use for 30 reams.

Agassiz's death! and his daughter in law! What an affliction! Well A died in harness, and that is what we all wish for ourselves to be able to work to the last. All these reminders are however of his frequent attacks and premonitory symptoms

his travels where study and investigation was combined with pursuit of health and rest.

I suppose a careful post mortem has been made should like to read something about it — published? Weight of brain? heart? What was the seat of disease?

I am at Juniperus and have found wire things — too bad that the Mexicans from Berlin do not come.

Tell Brewer that that excursion into Comfrey has set me back a little on Carts. But I can be ready in a few weeks; when does he want them? — spoke of Dec 1st but then I hope it will be time yet.

Yes, I got Contributions, Many Thanks — interesting things.

I return your compliments of the season. — The weather at least is mild and fine hope every thing else will be so.

George begins to take a good deal off my shoulders — is very zealous and will make his way — has studied hard and judiciously, and has a knack for the practical part; is also a good microscopist

Yours ever

J Engelmann

bad pen!

Yes I should like to have something for Agassiz Library — but not my Carts — tired of them! some useful book some time

St Louis Jan 21 1874

Dear Gray

The paper has arrived, all right, very fine, though dear; many thanks.

I write to Mr Watson, and letter inclose the letter to you — for the Mem. about Juniperus Communis, which name I should dislike to adopt as little as Quercus Mordax Kellogg which I am sure is a prior name for Q. Chrysolepis DC, an excellent species.

Mr Watson will have communicated to you what I said about Mrs Young of Texas and Buckley.

I have a few half notized letters of yours before me and will look them over.

Your Abies balsamea cones were received in due time, seeds all sterile. Don't recollect

it is my gardener-lot (Landlet) till last winter made an end of it. The present winter is mild. This evening 60° and warm rain — cold expected to morrow or next day.

Yours truly

J Engelmann

to have ever seen a good seed of that plant.
— Nothing extraordinary in the cones you sent.
— You say, you used to see large Cones
— but you can not produce them!
we ought to see and compare.

I wish Pres. Chadbourne would try
to procure the large and fertile cones
from his neighborhood for both of us.

I must have informed you that
Mizianda is unknown to me, Forestiere used
to be common here and ripens in June
will recollect next year. Now comes
Planchon and wants Planera in Sillim.

In the note on Y. gloriosa you
might have left out the words:
"like that of Y. filamentosa". for they
differ just from those by inches rather.
— never mind.

It is sometimes a comfort to learn
that a man is not reliable!
That doubt about — Mishaum queerness
Manila plate is happily dispelled
by your. „Dont trust them"

My enquiries about Agassiz's
sickness at have partly been answered in Sillim. Journ. last, but
expect to have more. — I expected
a very large brain, and the seat
of the disease there.

Most of the books you mention,
I have: Rendl, Miquel, Leonhardi,
Bischoff.

I have at Martin's Auction.
Cuvl Lorth sempl
Bonth. Lepr
Fayl Molley —
but dont know whether they would
be of any value to me.

Thanks for the lot of Bot.
notes from Sillim Journ.

Amorpha Dorax may be introduced in virginia
stands here well the 4. year,
though when the mercury goes down
below −20° it gets killed; had it

St Louis Febr. 14th 1874

Dear Gray

I was charmed to day in getting a bundle of fresh Juniperus osteosperma, as we may call this District species, for it differs Obispo and send you a branch to let you participate in my pleasure. Did you ever meet with it in California?

And more wonder; with it came a lot of herbage — fresh Adoularia diversiflora just opening the first blossoms (is it P. attenuata a mere form of it?). I would have recognized the genus from the odor, which reminded me of P. palustris! — The bracts are larger, and form a conspicuous red head — at least before the fl. open. These plants were gathered just 10 days ago, and in this season came fresh, without moulding.

The juniper berries are of course immature but the seed sufficiently well

formed — cut one first transversely, another longitudinally*, and take the stone out of a third and get well acquainted with the pulpe time: —

Rec^d your last Bot. Card. and, I think, answered it —

Yours truly

G. Engelmann

* I find the albumen fully formed, even now, in February, but the cavity destined for the embryo, empty; the fruit, I find ripens in July and this is our only species with 4–6 Cotyledons; all our others have only 2

with any, expect to every day; we will be able to settle them. Good things from Arizona, fresh, in same line.

I hope you will certainly go on Populus and be able to settle them.

I am sorry G Marber Eggert Regels Ulrii in the Torrey Bulletin only confuses those that do not know better.

Respects and thanks to Gray

Yours Truly

G Engelmann

March 7th

Dear Sir St Louis Feb 28th 1874

My dear Mr Watson

Your letter asking for Populus has done me a great deal of good, 1 because I shall be very happy to assist you as much as I can and 2, because it made me revise a neglected and shunned part of my herbarium, which wanted looking after very badly.

I find them terribly eaten up by insects, some species almost destroyed.

I will now tell you what I have, so that you may judge, whether it will do you any good to get the species.

Pop. angust., which from different sources, partly the same that are at your command. You place it with balsamifera of which I have no means to judge – but will remind you of the name of bitter cottonwood, Cattle, which are very fond of twigs of other Populus species.

wont touch it; is balsamifera the same?

P. tremuloides also from Fort Whipple, Arizona

P. unknown to me; you must have it from Fendler 818 — and Fremont. Willingness send ripe fruit (which I inclose). Fendler notes say that it grows 40 feet high, lower branches black, pendulous, can it be monilifera, more strongly tooth.?

P. grandidentata I have only foliage which I gathered at Niagara falls. — Wisconsin Leph.

P. angulata — can send you flower and fruit of our common plant, the Cottonwood of our river banks. Only vigorous shoots are phyllotactically beautifully 5 angled; fertile branches not at all

P heterophylla specimen from Prof Short, Louisville.

P. Canadensis? foliage from Kansas sub nom P. marylandica cult in Europe good fol.

P. ? foliage. larger and smaller, truncate or rhombic from "Rio Verde, Arizona

P. monilifera? orbicular leaves, Niagara same, as P. canadensis, Leph. Wisc, foliage, orbicular leaves

same (as monilifera) foliage Cambridge Garden, close to the west side of the house, foliage same, islands of Lake Winnebago, foliage same, cult. Germany " & ♀

"monilifera." Oakes, Vermt. "

P. balsamifera, Niagara "

Cult Europe "

— candicans; Hall & Harb. "

Niagara "

Cult Europe " & ♀

? Bighorn Mountains, Hayden — foliage — perhaps intermediate between balsa — & angustifol.

Poor, you see — never worked up — If you want any of the specimens, they will be sent. —

That box has safely come. Thanks, especially to Prof Gray for the various rarities and novelties.

I have from Kew fragments of Conifers, and from Berlin they are

3003 Locust St Alameda July 11 1874

Dear Gray

It seems almost strange to address a letter to you — so much has our correspondence slacked. Nothing to say?

I write today to ask, whether Parry sent you a little Astelepid from St George? I got a specimen from him in a letter, and find it a very curious thing, belonging to the Astephane DC Prod 8 p. 507 of which very few Cape and Bongil sp. are known. It is evidently closely allied to Haemax (p. 509). I enclose a bracklet.

Do the Arizona Collections contain anything like it, or has it been noticed before?

We are well, suffering from heat, but I feel not as much tied down to practice and propose in a week or so to take my wife

I neglected to return your Nitra, will do so presently. — How does your Sarracenia purpurea behave? In what the quantity of secretion? not mixed with rain water? fly-eating?

Have those carnivorous plants been chemically examined? do they contain other ingredients than common plants? More nitrogen-compounds?

Thanks for Murray's Japan Conif. Murray is hasty and incredible but I am afraid his Abies magnifica (the amabilis of Bolander, of the Big trees etc) must stand. Parry has sent flowers, & my Abies concolor, the species seems good; it is Wilson's A amabilis.

But enough — you have no time to write letters and none, I suppose, to read!

Yours ever

S Watson

That Amaranth is near albus, which I have long known here as a rare plant, but which is also getting very common, but not at all like this. Which looks very distinct

to Colorado where I may meet Parry, who seems to hold a sort of supervision over that part of the Rocky Mountains. You guys can then fight it out here.

I have contributed off a lot on Juniperus, and am about ready for publication.

Generous, you know, has also occupied me much; but nobody can do any thing satisfactory with them who is not among them and can observe and study thousands of specimens. I find the White-oaks of the West and the Pacific coast the most unintelligible. I must have told you that I made some curious discoveries, which are worth publishing; — but I hate to publish fragmentary results, though they may stimulate others to further observations and communications.

Our weed flora is worth observing. We have many new weeds since a few years — a crop of "civilization" in my little grass plot. I have eradicated over 100 seedlings of Cassium Lanceolatum, unknown here 10 years ago. And an Amaranthus, which I do not know, has come up since 3 or 4 years and is now met with every few steps. What is it? I include Crumbled taken from my yard.

Has Watson given up the Catalogue of Western plants, promised as long I believe 10 years ago? I used to put down and catalogue every new thing on note, which my age fell on — until his publication came out — but neglected since then, and am suffering for it the want of now! What are the facts and what the expectations?

Gray

(Bull. Soc. Roy. Bot. Belgique X. 1871-72
Satorius Note sur les Hieracium du Wisconsin
Whether of any importance I do not know)

Sec. Amer. Acad

Dear Gray

I just got letters and packages of all sorts of Lycopodi & Cupressus from Braun, and can revel in the little fragments of Schiede, Ehrenberg and others. B sends me also some seeds, which I share with you, as the plant most interest you: Lactuca virosa Lespinasse & Thevenaux, an immigrant at Port Jouvenel – "country unknown" B recognized in it a plant which I had collected in the street of Albany "it is Gray's Lactuca elongata – afterwards Lactuca virosa, which are both very different things" – "it is a very distinct species"

Nothing new otherwise. I begin to get flowering oaks from S. Carolina, and hope to establish some of the old –

doubtful species on firmer basis.

~~Braun says, that — botanists Zeitung~~ ~~botanists~~ German! Braun says that among the American Hydrophyllaceae in Berlin several are wanting; among others Cosmanthus parviflorus and the true C. fimbriatus. — C. Parkii is cult. in Jardins. Can you supply?

It seems that V. tri's arrival is unknown. German gardens must send seed next fall. I begin to doubt the value of my favorites in Grape seed!! What then rely on? Regel?

I expect to hear from Tinton about Populus.

Yours truly

J. Engelmann

time. I thank Miss Ayering for those books. Braun says he is older than Ad. was

St Louis July 20 74

Dear Gray

Thanks for your nice letter. My trip to Colorado has been interrupted by a severe rheumatic inflammation of foot, and I, though getting well, have not left the house yet.

Did you have sent that curious little Asclep to Bentham; please send also the name and [illegible] and seeds

I am glad to find a plant to dedicate to Mettenius; as one too belonging to a family of his favorites and among which he has found that curious Arentes aping Asclepias Tuberosa, which I will also figure and publish

No, a sturdy old German I will never leave hot St Louis unless I have died and written

think I have spoken of years. But gradually and more from practice and may give it up entirely; though I am so wedded to it, overlook and bear the unpleasant, and enjoy the pleasant and thankful part of it — so that I do not know yet how to do without it. Nor would I separate from George.

But it is not impossible that I may occasionally spend a few months with you! — We will see — we are young yet (only 65½.) and may live and work a little longer. I am glad that your Western Ideas take shape and are likely to give us the long wished work, capital to commence where you left off 30 years ago! Why not at the other end? —

I may bother you with a letter from Colorado where we hope! to go end of the week —

Yours ever
G. Engelmann

[illegible] Sept 11 1874

Dear Gray

Got your letter yesterday night & see that [illegible]

PC and its short sentences an occasional joke. I suppose the exhilarating air here has affected me. You took too serious the joke about Gray's Scale — and as to Riley and jealousy I forget what I may have said — it cannot have been meant seriously — far from it! — I am afraid you will misunderstand also the Cucurbitaceae maximissima joke, and I position to deny entire any serious interpretation. I say, if you will have proposed two or three new genera, which [illegible] Are they not curious?

Can you get seedlings of Abies balsamea? It would be quite interesting to compare with grandis. Of the character of Menziesia seedlings I have spoken, the cemetery will easily distinguish them from Eupatorium.

I have yesterday while sifting pour a terrible compost, [illegible] [illegible] to [illegible] immediate. It is certainly

perennial and is one of those regularly built plants, which show the same number of organs in the same regular succession for the present (and several past) year and for a succeeding one. Besides that, its scales radical stalous. —

Cersium Parryi — good! that is the the other Cacoon one, similar to C. dencecum, if I recollect right. It is quite variable. I have a form with cristate-pectinate involl. scales. — What is the red one with the much larger glutinous involl. scales and darker & grey tips?

C. edule would be the best name for the scaleless one — your Drummondii I suppose. Yes, it occurs with us — 2 — 3 feet high. R. white with purplish tinge of anthers. With me the difficulty consists in keeping it separate from C. morphelum. They are very closely allied; the two R. scales and the much longer woolly chaff of the receptl. are about the only distinguishing marks — I have never seen it scaleless. Parry fights for the separate specific existence of both. No hybrid, but intermediate forms!!

So it seems Mellichampii will not hold! I am sorry for it. I have a bad cold and wife a sprained wrist (fell with the horse)! Otherwise all right

yours ever G. Engelm.

L. Spur Sept 11

gentiana, seeds covering the inner face of the pod. This singular fact falls into the general rule: seeds usually on the placentae!

The placentae from both commissures spread out and unite, so that they form a sac within the ovary proper. This last is a thin membrane free or almost free from the placental sac except at both commissures, and is easily separable in all stages of development even in the ripe pod

I guess it is a case
exactly a day after the
other, and this pollen!
[illegible]
(Calyx [illegible])

Here the placentae [illegible] with sides
meet a sort of commissure [illegible]
course alternating with the commissures
of the carpellary leaves, can
be discovered, and there are no
[illegible] are developed, so that
properly speaking you have 4
broad rows of ovules. Thus in Gut
Parry and affinis
same in Pleurogyne
and Swertia.

The "versatility" of anthers
is another pretty thing. It is a
regular biological process. [illegible]
my figures in Ivesia. Old Asa Gray are
wrong! [illegible] Pleurogyne

[illegible] [illegible] [illegible]

[illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] the happy [illegible] of [illegible] mountain and pleasant valley [illegible] [illegible] past [illegible] [illegible] the past [illegible] [illegible] [illegible] to leave the mountains, with all their [illegible] [illegible] and [illegible] [illegible] [illegible] disappointments [illegible] [illegible] [illegible] still,

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] a week ago and have spent these days in Manitou and Cañon, with a great deal of pleasure and satisfaction.

[illegible] the beautiful [illegible] [illegible] canon

The [illegible] ago [illegible] [illegible] [illegible] account etc. No, the two trees are absolutely different in locality, bark, [illegible], growth, leaves and fruit. [illegible].

Thanks for your [illegible] [illegible] of [illegible] calligraphic [illegible]

[illegible] yours

[illegible] [illegible] [illegible]

[illegible] you.
I am delighted to [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible] continent.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] will supply you with some. —

The [illegible] [illegible] [illegible] Oenotheras in the Ute Pass [illegible] [illegible] abundantly [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible].

[illegible] the [illegible] Cacti of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] especially some [illegible] [illegible] [illegible] doubtful [illegible]

I found there the first Cactus [illegible] I had seen —, While at [illegible] [illegible] [illegible] [illegible] astonished me, I found here [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Other plants found near St Louis, washed down by the River are.

Glycyrrhiza lepidota

Helianthus Cattesianus.

The latter is getting to be common throughout Missouri along Railroads

In ~~eastern~~ Kansas & Western Missouri a pale purple asteroid was frequently seen first days of October from the Railroad train, evidently Bolonia latisquama

I have got of Wilkes' Expedition your plates 1—100, most south sea plants; shall be glad to get text and more plates

also Plants from Anderson in your hands.—

St Louis Nov 5 1874

Dear Gray

That little Gentian (Bigelovii) I have had from Bolander for 10 years, figured, described it (G. crocea) and called it dwarf!! Isn't such a name better than the eternal personal names? The other is new to me. I have also 2 Gentians from Greene a few days ago, one seems true G calycosa,* the other may be your simplex, (winged seeds!) but with fringed lobes.

And here let me branch out a little on that shallow and unscientific doing away with the work of others on slightest ground which I find in Rothrock's late publication just received. How can he throw together your G. simplex with entire lobes and winged seeds with G detonsa with fringed lobes & granulated seeds? And my personal barbellata with the annual detonsa.—

Where is Carex Parryi Gr descr. which I see quoted there without a word of explanation?

Again he very "cavalierement" disposes of Abies, mentioning alba & balsamea without a word of explanation: prey which is his balsamea, the Eastern Mountain tree or the Pike's peak foot hill tree! This latter has now

*Calycosa and (or even) one of these is the mine in the first place, Hooker's figure is perfectly

also been found by Brandegee, and Boland to whom I have sent sp. says, it is his A grandiflorus from the Utes — insists on his A amelichiis Dougl (which is A magnifica Hooc.)

Again the Nat pine is disposed of as P. monophyllus — if they are all the same, then monoph. would be a poor name for a species which varies with between 1 — 5 leaves. But P. Cembroides would be far the oldest name and a very appropriate one!

This throwing confusion and doubt among botanists, on the slightest or no baseless grounds is abominable. I had expected otherwise from your disciple.

Is it worth while to buy the 4 vol Index to De Candolle?

If the calls of those Gentians are "truly verifying" they must be imbued with the placental character; besides, a thin pericarp is easily detached from the fleshy inner "placental" stratum, at least in G Parryi & G affinis.

Aphyllon fascic. I have found in Michigan 35 years ago on root of Helianthus candatus & preserved the specimen.

Enough to day — More in the notes enclosed for J Watson. Yours truly

G Engelmann

Gentiana autumnalis is very doubtful to me in Colorado.

I find a botanical Collector here who has been teacher in Germany and has been collecting formerly in the Hartz Mountains. He now lives by carrying a newspaper devoting his free hours to botanical excursions.

H. Eggert is his name.

Is there any one who would buy plants from him? Cheap! He expects to send the bulk of his collections to Germany for sale. Of course the great mass consists of the more common plants of this region, but he got also some novelties for the Manual.

Cuscuta cuspidata Eng fields in Mississippi bottom, opposite St Louis, on Ambrosia trifida.

Bergia Texana Seub.

Roadsides in South St Louis

(not exactly within limits of Manual a mile or two from them.

St Louis Nov 9 1874

Dear Gray

Splendid weather — no fires since a week — — My Gentian-heart has been warmed up and I am in the best vein to work up the whole of American species if I had the material, which I have not!

I will report now that

G. Newberryi is good, though near G. frigida

G. crassa very peculiar

G. septemflora was sent by Rolander 1865 from Mendocino

Hall, Oregon 426 is the same or a very closely allied form, and not G. affinis!

G. simplex annual, wing-seed is good, and was sent by Greene this fall from Summit Valley with white lobes, but Rolandos 6359 is not simplex, but detonsa, with almost

entire lobes; granulated ovules!

Gentiana Menziesii was sent by Greene from Summit Station, though not entirely agreeing with Grisebach's descr.

G. calycosa you sent me 12 years ago, coll Lyall. Reëxamination shows it to be entirely distinct from Parryi, which is a very good species, and can be recognized aside of more essential but less visible characters by the boatshaped bracts.

Pray tell Sargent to send me specimens of A Balsamea if he has any.

Abies remains in abeyance, you don't know even what grandis is, and ~~will~~ must revise all the accumulated material.

My Corydalis was collected by Parry in Utah, Brandegee on the ~~Colo~~ Arkansas, Watson in his expedition, though he makes confusion, as does Porter (following Watson?) and now comes Bolander,

saying that it is a common Californian fir, and in fact all the Californian grandis belongs here. — But why write to you about it — better give you the results when matured.

What do you want me to do with Gentianas especially the two mentioned by you? I may publish an account of all my accumulated matter in our Proceedings. Shall like to reëxamine your original G. simplex. Even flowering specimens can be examined for the ovules, which already show the character of the seeds.

Yours truly

J Engelmann

mountains; perhaps that Eve = my convolor ?? — I do not speak of the "amabilis" of Bolander etc with biggest cones — which is a good and distinct species: A magnifica Murray

Mr Shaw was very sick and seems not to recover well — 75 years old! If he dies we shall want a good curator for the large establishment; you must help us find a fit person, when it should become necessary.

Yours ever

G. Engelmann

I want a new bearded photograph of Gregus histutus; what I have is too smooth and youngish

St Louis Jan 3d 1875

Dear Gray

a happy new year to you and yours! We have commenced it in good health and good spirits and with good resolutions. As a proof of these I send you those Gentiana notes; you see that our Gentiana Bigelovii or G crocea has become a Crenaria, and an old South American species. Perhaps you can compare South Am. Specimens; I have none — but there can be no doubt — as it is almost identical with the European C filiformis.

Your note — letters you have given up of writing — of Alsine 17 contained "G. simplex" but the fragment is so incomplete that I can not make any thing of — but I have told you before that Greene sent

me a Gentian which is exactly your simplex, alate seed & dull, but has dentate if not fimbriate corolla. The plant distributed from Bolanders coll under that name is G. detonsa — thus Rothrock, who has been to see me here — is only half wrong.

~~What do you say about Gentiana~~

I cannot write out now my notes about fertilization of Gentians; leave that for another occasion.

You make G. Olivieri the same as G. puberula. The former was unknown to me until I got a fragment from Dr Mellichamp; they seem to me different; our plant has ~~four~~ authors, the G. castera coherent ones etc.

What Genus does Bentham now attach my Mellichampia to? I neglected to take notes when I had his letter. We will call the species .... Mellichampia, Parry.

wants a description of me:

Abies keeps troubling me. I think I know grandis pretty well now, from Colorado to Oregon, and have little doubt but amabilis has not been collected by any one but Douglas & Newberry; and is but a form of grandis. — By the way your Correspondent who collected Gentiana Newberryi ought to find it and identify it by Newberry's good description. Newberry found his Gent. N. in exactly the same region. Write to him about it. The very dark green thick foliage, with two broad silver bands on lower surface seem to distinguish it at first sight, and induced Douglas to give it the name of amabilis. We got specimens together in Dropmore from Mr Rost who insisted it was the true and rare grandis.

But no grandis in the Calif.

St Louis Febr 8 1875

Dear Gray

I think I wrote you the 1st sending Gentian paper — too late, I see, to go into your „contributors" — for which I am much obliged. You have done a good work in clearing up Cnicus and Physalis, and the confused Boraginaceae.

But I differ a little from you; perhaps that is saying too much, as I have not sufficiently studied the subject. It seems to me, however, that C. Drummondii and eriocephalus should not be placed so far apart, and I have suggested to Parry already the probability of their running together; Drummondii e.g. is common about Empire, generally acaulescent, but also 1–2 feet high (and intermediate forms) the higher ones

is it not a little too full in the face? Or have you become fat?

with less crowded heads (longer internodes) Ephedrales I found on the alpine light, above timber, but in the upper part of Clear Creek valley, in the woods, is a form (apparently brought down by the waters and growing with Gentiana Parryi and other alpines) which is less woolly and approaches the canescent Drummondii. No hybrids apparently.—

Both have white flowers, not yellowish ones.

Your C. Parryi is common about Empire, and the caliroides, a little different from Hall's 342, I have found near Idaho Springs— both have yellowish or chrolucous flowers.

Will send you seeds of Physalis lobata for the Garden, together with other seeds— but suppose you have most every thing from Parry.

I have mailed today copies of two forms of Abies concolor received from Johnson in Utah. That Abies middle is not yet settled; and you are, I suspect nearly right in placing grandis next to balsamea, while concolor is quite different.—

(3)

I had the pleasure to pay $14 for a box of Cacti from San Diego the other day— hard frozen and dead of course. Nothing new among them, except the mature fruit of Two Opuntiae. The characteristic seeds of O. prolifera E. 1856, heretofore unknown confirm the species excellently well. I enclose some for Herbar and for sowing.

Hard winter, this! no peaches next season.

Yours truly

G. Engelmann

Thanks for that Photograph.

in Hooker's Flora, I mean, — Fr. Carolina has not!

I can tell you, that Conference may be done any time, but some mooted points can not be settled, until someone who is up to it goes to the Cascades & the Sierras himself.

I hooted at your idea of Abies balsam & grandis being identical — well, they are so near that the characters to distinguish them vanish!

I have written to Hooker to ask whether Douglas' trees of grandis & amabilis do not bear cones — (they did not in 1869) if that could go far in settling them — I take them to be identical spec. — but distinct forms.

Rothrock has done well, I have a number of his things. I quarrel with him about a Pine, am afraid that we may get a new Pinus Strobiformis by his existing labels, — but he

St Louis March 7th 1875

Dear Gray

I felt really happy to see your hand writing again. So you have been sick and are beginning to feel like working again; good!

You must have transposed labels of Lindheimer's plants. Lindh. never collected any other but the one Specularia, No. 450, 1846. and I have the same from Wright, San Marcos (same region). No. 449 is Piscidia and 451 Diospyros Mex.

I have in my herb. 1, Specularia leptocera (Campylocera L. Nutt Prismatocarpus paradoxus Nutt) coll. Port Gibson by myself, Manwaring Ferry, Hayden. Can spare you specimens.

2, Sp. ludoviciana Nutt / Dismirodon vatica Nutt. Prismatocarpus ludoviciana Nutt,

which I collected in several localities in Arkansas & Indian Country and Beadles found it about N.Orleans. That S. Lindh. 450 is a very distinct species, loose flowered, while the other have glomerate flowers.

Work up any order? No! That is not any way to do things! — I dabble a little here and there, get interested, and stumped — lose zeal — and the work has to be done over again at some future time by me or by somebody else —!

But jesting (half true) aside My time is too much cut up to undertake any thing serious, and I have not the material nor the books — I won't say that I am getting too old — for that I do not feel yet.

Yes, do take up Scrophulariaceae a worthy subject: a focus-nace worthy of your steel! But after conquering Pentstemon you will find little difficulty with the smaller genera. But until you get quite well, take an easier more playful task.

I will help you in Gentianeae, and may do Erythraea, if I only can get de Candolle, esp of G. Chironoides. I will try — I have worked up Erythraea pretty well that ever I have of material. The question with me in that genus is, what value the shape of the stigma has — whether there are not two forms of stigma (sub mate. & subfem) in the same species. — Rothrock has sent good specimens of an Erythraea. —

Is there any other western Frasera but speciosa & albomarginata? Gray says (Mr Watson) x every one says of Frasera: no folds or fringes of Corolla, but both these western species have at the base of corollabes fine fringes — well figured

swears that his hands got sticky enough to know that those branches and that cone do belong together and that it is not t'other thing

I must admit it under protest. He got oaks and Pines near to our Flora.

Rothrock has also settled some of my Agave mad'le; But several of Schott's species have never turned up again. Fortunately his specimens are good for a full description.

You want me to ~~do~~ take shares place after his death — I am twenty years too old for that — The complicated affairs of the management would bear me down, no — And, besides, I feel so rusted in in my profession, that I do not

feel contented outside of the bustling, ever varying life of a physician and its excitement, And then — I should not like to separate from George and also from the City, and live 6 miles out in the country.

Well, about the thistles we have to wait and observe them better in the Mountains.

Hope Mr Gray will get right when you are all right and no sleepless night trouble Both; but the invalid relatives are waning here also! —

Hope Watson will not make too many new spirits! please give him the enclosed

Yours ever

G Engelmann

St Louis March 18 1875

Dear Gray

That is good news which you give me — you going south and returning by St Louis! Keep me informed about your movements. You should try to see Avonel and especially Mellichampe, at Bluffton, between Charleston & Savannah.

Thanks for the notes about Frasera, but I find that you also are getting forgetful! I am worse! I found a mem. on Frasera which goes further than yours. Your F. delavayi was described by Franch in Bull Bonn. p. 156 as F. Parryi, and then there is Frasera thyrsiflora Hook Journ Bot. Gard Misc. II. 288 fide Walp. Ann V. 519 from the Upper Columbia (= F. Carolinensis in Hook Fl. B. A.) so that we have now 8 species. I have seen or examined only Carolinensis and speciosa. —

I should like to get a flower of Astragalus eriocarpa and A. vestitus; can you spare me one, to cut up. — Parry's plant is scarcely A. eriocarpa —

I have to write a long Gunnison letter to Watson — so do not write at all! Will try soon.

I think the principle ought to obtain, to describe new forms, in such intricate genera, and leave it to future study in the field, whether some of them may have to be united. No harm if the name we now

give as specific, will in future figure only as that of a variety.

But I am now pretty certain that what we have named G. Emoryi is different from the original figured in Emory Report and is most probably only a form of undulata. But the true Emoryi is probably good.

But I want better for you.

My wife had a bad fall a week ago on the edge of a stone step — broke the temporal artery — Terrible effusion under the scalp — She is still confined to her bed, but resorption is gradually taking place.

I suppose you want the Lesquerella returned. Here it is.

The weather is on us yet — but, to judge from the papers, worse with you. Try and get off soon!

Yours truly

J. Engelmann

I was forced to lecture the other day — send you a copy. The matter has some interest in regard to geographical botany of the Colorado Conifers — You will smile at other matters

I have revised my Mertensias after your new light — but will not Lancolata, alpina & oblongifolia fall together? And also Sibirica & paniculata?

I am ashamed to say that valuable western collections are in my hands 15 years and not worked up by me and held back from others. Let me know, what you are working at and I will find time to pick out — which may aid you. It is tiresome to it, and getting worse with age and to the final close! — Where are Fenzler's Boraginea named? not in Boundary Report.

I am at Erythronia again — very difficult, because we have no reliable chart, don't know whether there are no dimorphic forms — It would be necessary to study them in the field — as well as Mertensia!

Whatever Gray & Watson says to the contrary the stigma is in all Europ & Asiat. sp. bilamellate, never capitate, tubular etc, and I think different in Europ from Amer. sp. So that, to test that, I should like to examine American E. pulchella. All the California pulchella, Nuttallianum etc

for Gray

Gentiana Newberryi Gray

Kellogg & Harford No 839

from Clarks West Falls Meadow

I see that you call Erythronia albidum white — it is white with a rose purplish tinge, more or less so, never, here, bluish.

Overhauling my Colorado Cirsium again, I am again puzzled; I can not help bringing Drummondii & eriocephalum close together though you place them in two different S. Moreover Hall & Harb 363 is rather a smoothish eriocephalum, with tips of inner scales manifestly scarious, but had been named in pill. Cat. by Drummond.

It well developed specimens of both Drum & eriocephalum the leaves are very narrow, broad-linear, and similar involucres surround the clustered heads. — The acaulescent var has 20-30 heads but I have seen as few as 4 and as many as 50 —

Both have real white flowers (not yellow as in H. Hall). The principal difference is in the smoothness of the

heads of one and woolliness of the other,

St Louis May 13 1871

Dear Gray

I had all your ("more seed", as you used to say of Darby's small specimens) short notes in due time, also the Isoetes, which is now growing; for your gardens information I will say that years ago I raised several species from seed and propagated them, in a flower pot which is placed under water or level with water in a small tub. I named it Isoetes granulata, but perhaps never published it

So you had a fine time, seen Lorenz and the new Pine and old Chapman! But you could go and see that pine and be satisfied with the bits Chapman gave you, the poor bits!! I am afraid you never felt the authority of a collector! You ought to have had me along — how I would have got back, cones, young branches — no doubt flowering just then, and old cones, which must have been in abundance on the tree: nothing, nothing but a few old leaves and a cone

Well, it is enough to say that it is quite a peculiar thing; the cone is much like Taeda, the leaves like glabra but longer. You know that the closed or late opening cones gave to Serotina its name; and I thought of that also — but the leaves! Are they really of the same tree? Several western Pines and a number of Mexican have the same feature — cui bono? I know as little as you do — nor do I know how long the seeds remain good, nor how they finally escape. P. contorta has strings of cones of 3 or 10 years on the same branch; P. insignis is similar.

I wrote immediately to Chapman for more material but have no answer; more seed!

St Louis May 24 1875

Dear Gray

Yours of May 20th rec'd today. Quercus Georgiana is good! and a good sp. with ♂ & ♀ ♂ fl. Look at the almost glabrous ♂ aments and the glabrescent leaves! It is closely allied to Q. rubra evidently.

And see my new character from styli elongati patuli recurvi for that section, nicely exemplified in Q Georgiana.

No thank you, I have Scarlet sp. and hope to raise it — it is growing well. Tell Ware to put the pot in which it is in a larger vessel and keep it covered with 1 inch clear water (not Mississippi mud!), letting it evaporate till the leaves are exposed, then fill up again; I think it will do well thus.

Well, I wont have hit the right Chord, for Chapman has answered and sent more specimens. It is very closely allied to virens but probably distinct; a very nice and good thing; have written to Parry about it who can show you my letter if it interests you.

Well, I suppose you have to send me your Lythreae, to work up. — I find a very pretty character in the stigma to distinguish European and American species! but Griseb as well as Watson did not understand the stigma. Pity that one do not generally have ripe seeds. — Griseb says ~~semine laevis~~! All are rotundate!!

Put the question to Mr Sargent about Quercus conduta, whether my seeds are growing and how — and whether any other of the acorns sent —

Better cut this out and give to him: it is of botanical interest because Michx says they grow with cotyledons separated and long petioled different from any other oak.

Q. myrtifolia from SC grows with him, but Q. sinuata did not germinate (as a hybrid?) —

I should like Mr Sargent to confirm or refute these observations are the two Cloud Physelis growing?

You see I can not help bothering any one who will permit himself to be bothered!

You say nothing about my botany Utah Collections.

I enclose a list of Families Boreal America —

Yours truly

S Lesquereux

St Louis May 29 1875

Dear Gray

Coming across my Juniperus investigations of last winter a year ago I find that it is high time to publish something about the results, though I could never decide about some difficult questions, e.g. the identity or distinction of the Mexican Juniperus tetragona and J. occidentalis, which seem to meet and identify in Texas!

Wright's Cuban 3187 is a distinct thing allied more to this tetragona than any other species. I want him to give me all the information about it, he can, and beg you to forward my note to him.

Do you happen to have seen of it? I have only immature males.

Pinus clausa, the more I see of it, the more it appears distinct from P. inops. Yours ever

G. Engelm

I open the letter

I just got a piece of trunk and foliage of I coulteri von from Lindheimer of which I enclose a bit together with a fragment of the Oregon plant Lindheimer looks (also) different from the Colorado plant.

You find in the fragment some open fruits with protruding seeds I have seen the same in Colorado; it was first mentioned by Schlechtendal in Mexican specimen

Viola, which I wish you or Watson to compare with Beckwith's; I suppose it must be this species. The seeds I send are said to be V. Nuttallii but I suppose the name is transposed and means Beckwithii, as the flower is compared to the Pansy.

I told you that I have in my hand the Utah Coll. of my brother, and that those families which interest you particularly are at your service.

I think I will not trouble you about Erythrea now — but may take them up some other time.

Expect to get the Sonora paper to morrow — ~~Enclose~~ Send a copy of that hastily written Rocky Mt Forest Reserve — Meehan reprinted it — By the way Mudrose Exa proves that we have in our Missouri Carboniferous formation Coniferous wood. Do you want a fragment?

Yours truly

G. Engelm

St Louis July 9 1875

Dear Gray

I am perhaps more prompt in answering a letter, but woefully deficient in other work — accomplish nothing — feel inefficient! No Arrantabi — no Dias, no Cuipuri, no Agaves, no Quercus finished yet and almost all the work done!! But then in extenuation of my sins I must plead the life I lead, which leaves for such work only the hot and tired afternoons and sleepy evenings. — And then I never feel as if I was through something always remains to be made out. — Thus I have just written to Lemmon about the high Sierra Abies Mich they wrongly call amabilis.

~~Good~~ people of San Diego help me with Carlis & Agaves

of which Cattle I have a new and very distinct species as it appears from the foliage — but no flower yet it is.

I write principally (not to grumble) but to tell you that your Lemmon Euphorbia is a large leaved specimen of E. ocellata Durand & Hilg. (mechanically by the absence of appendages to the large glands) and Brandegee's Cactus of the San Juan valley is Cereus caespitosus var castaneus, which may really be different from the Mexican C. pectinatus.

Thanks for Lugh miseria.

Also to Sargent for sending G. undulata. Mechan's separated cotyledons of this sp. he afterwards explained, in the simplest manner possible; he had acted the accoucheur, liberated the confined cotyledons and, as he says, made them better subservient for the purposes of the pamphlet.

I had occasion to look over my Asters the other day, and have laid aside for you specimens of the pubescent A. sagittifolius, which may be Drummondii and also a form which could well represent in the form of the leaves, A. oxyphyllus.

I have some correspondents in this neighborhood and in West Arizona who send lots of plants to name and thus force me sometimes to study difficult genera.

It seems that we have quite heaps here Saxifr. Forbesii and others nice things. And my Cons from the Sedic Nation sends Hymenopappus corymbosus var Nuttallii, which looks so very Astrag with the capillary divisions of leaves. also a (new?) Aquilegia, Selenia aurea and other things which I got just 40 years ago in those regions. I hope he will find my Astr. Nuttallii perhaps and make out what it really is — Sedic Nuttallii x Corsiflorus. Callistemon digitatus (Unknown note!) folis partialis indivisis etc.

Rattan, Army surgeon in the Interior of Oregon sends nice things, among others the enclosed

St Louis July 21 1875

Dear Gray

I just get from the "Indian Territory" what purports my new Aecidium but which proves to be nothing but Melanopsora. As I have the Grape fungus to send, I enclose the remnants of the Aecidia, quite dried up, also, for Mr Sargent to cultivate.

Unfortunately my correspondent pulled out the leaves only leaving the rhizome in the ground. The latter would no doubt vegetate again in the fall, and the spores I expect, will germinate. There is also some soil in which they grow "hard pan" with it — on dead flats, usually partially dry — I would advise the spreading of both spores

things are neither not pistills! — these are sub-sessile.

I send Grape leaves (Vitis riparia) with Phyllopsora galls. Have pressed more which I can send if you want them. I got them in a Vineyard last Sunday where I find also Grape fungus which may interest Prof Farlow.

This what I described in Transact St Louis Acad. II. p. 165 as Naemaspora amplicida, but which was named by Berkeley & Curtis Phoma uvicola (on Labrusca & Concord) July 18th

Dr Gray,

[illegible]

[illegible]

[illegible]

over the ~~ground~~ soil of a fl. path, kept wet, or slightly under water.

Your Stone Mt Isoetes is growing, but shows no spores yet.

I do not think we will leave St Louis this season

Yours ever

J Engelmann

for Gray

Callitriche antarctica I based entirely on Hooker's specimens in your Herbar. None of them has pedunculed fruit, and Hegelmaier (Append 1. p. 40) makes (the sessile fruit) one of the characters by which antarct. & obtusangula are distinguished from heterophylla (which I also founded on Mandon's sp. in your Herb. I should like to have some more sp. & materials for.

Azolla used to be abundant here, but since Debey, Hegelmaier and others have so badly wanted it our lakes have dried up and Bidens & Cerasia grew where I used to gather Azolla. This year unusually wet here, may bring it out again. If so, I will send specimens.

Oh, Oh! So much for hot haste! those big, long stoped

I don't think I have written to you about that Stone Mountain Isoëtes. It is fructifying now, and a most interesting thing. I hope you have also succeeded in raising it.

Account of the black macrospores (gray when dry) I have changed the (unpublished) name granulata for the better one Melanosporon; velum entire, like the Florida Isoëtes etc.

See whether yours is doing as well!

Gray

The late McGuire of Louisville sent me years ago Helotropium tenellum, I believe, from Kentucky. At all events it is common on the hills south of here, and probably crosses the River with that geological formation between here & Cairo into Illinois — I would expect to find a number of the rarer Missouri plants there. Gerardia pectinata also grows about the Iron Mountain.

St Louis Aug 31 1875

Dear Gray

I have a zealous young botanist in this County a teacher, who often sends me packages of fresh plants to name for him. I believe I have mentioned him before, as having ~~that~~ Saxifraga Pennsylvanica from his neighborhood.

He has been to the eastern part of Missouri during vacation and found some interesting plants

They are not, of course in your floral domain, but would be found there also as "Poplar Bluffs" a Station on the St Louis & Little Rock Railroad on Black River is so near the mouth of the Ohio.

Also obtained Iris Spiranthes Nuttallii and Eryngium Baldwinii (leaves rarely ever divided) — besides Fagus, Rhododendron, and other plants rare in Missouri.

Varnish sumach grows there and on all the hilly region from the Boon Mountain down, often 3 feet high and more and very frequently with flower and fruit in bracted racemes much like V. arboreum of same region. Berries very large, bitter only, before fully ripe, after that rather insipid, not unpleasant — ~~very large~~.

(Do you want ripe fruit for seed?) — leaves on young shoots sometimes very large.

I was delighted to see that Palmer continues active and makes so much better specimens — they used to scare me.

I am just getting rid of an attack of my rheumatic gout or gouty rheumatism of the 4th since 3 years! × Roaming over the Mountains would be the best cure and perhaps the warm springs of Middle Park.

You did not tell me about that bit of Viola — is it Beckwithii?

Yours truly

S. Lagelmann

Over.

× and just before I write this, I have taken Colchicum & Bryonia — it seems as if I were better.

for Gray

Sept 75

Why not separate the Gentians thus:

Gentiana corolla plicis auta
antheræ erectæ fixæ

Gentianella corolla plicis destitutæ
antheræ versatiles

Asterias (i.e. Cutes)
corolla rotata plicis destitutæ
antheræ erectæ,

at all events these may be sections much more natural than those of the books.

All Cyphneæ are "gymandræ" with effete anthers twisted and all in same direction (as corolla)

Gentiana Phæcelii Gris must be a puzzling thing, which I should like to see and examine — said to belong to Gentianella (above) but with plicæ.

plants, which make only so many leaves every year. I have in Colorado last year (it is fully a year already !!) examined many long plants, and dry them up too, which Parry who is not radical, does do (I am only in botany!) and have found besides the above characters deep in the ground runners, of which I enclose one specimen. But the seeds distinguish it vastly from your simplex, which I believe is always dentate, if not fringed.

Besides the genuine you mention I have one from Mr Greene from the Sierras which must be G. Menziesii.

Now an eastern genuine Note & Query: You refer in Manual G. Elliottii Chap to G. pubiscula but Calyx-lobes in former so much longer & another coloring and (fide Chapman) ovules covering inside of ovary — In G. pubiscula calyx lobes short, anthers free, ovules (fide Manual) only on placental sutures.

I am just getting well of another rheumatic-gouty attack! Otherwise we have had a cool pleasant summer (hottest only 96°, & all August not 90°) wife well enough — both getting old!

Yours truly
J Engelmann

3003 Locust Str St Louis Sept 3d 75

Dear Gray

I wrote you, yesterday I believe, yet yours today about Cuscuta!

This takes me aback — why, what has become of Castis? Browner wanted them about August, and that was the last I heard of them. They are about 2/3 done — and you already print Compositae?! How is that?

Glad to hear what you have to say about Erythronium — but I can not fully agree with you. Too many species, I fear!

Of course the stigma is bifoliate in all Erythronium as well as other (all?) Gentianeae and most probably the flower is protandrous the values of stigma opening after stamens are effete. I have never examined one alive. All the talk about tubular stigmas, etc is nonsense

I doubt very much if you have Dianthus on the Pacific coast — none of the numerous specimens you have examined belongs to that species; but why may it not be introduced there? I will tell you though that (E. speciosa excepted) all European Erythræas can at once be distinguished from the American ones by the stigmas.

I Stigmata transversa, flabelliformia
a. latior quam alta — North America
b. longior quam lata — Chili
II Stigmata ~~orbiculata, ovata~~,
Longior quam lata — Europe
a. ovata (Centaurium, rumelica etc.)
b. lignlata, elongata, (maritima, maritima).

That Chiloe bracket Chilean Erythræa is not Chilensis, which is distinguished from all others by its stigmas; it is a form I have no name for.

Of course you have the means to compare original specimens (Hartweg, Douglas) which I have not and are thus better enabled to judge, but I fear you go too far in distinguishing forms.

Why do you write Tricanthus, while Trichanthus is correct?

I have noticed that my "Nuttallii" collected by my brother, of which I sent Watson a specimen, has as large seeds as the figure of Trichanthus, which I got from Asia, and they seem to me to be all the same; but I have been able to compare only a miserable little fragment of the latter.

Hall's Oregon plants, and the one which Parry sends this summer (I enclose seeds for garden, just received) — I think must be your E. Douglasii; — and the true Nuttallii I have not had from any where but Nevada by my brother as above mentioned.

Why Gregg & Wislizenus Mexican specimens have none of them Calyx longer than tube, by your key Chorosia ciliata has, — but a Bolander Yosemite and a San Diego specimen have Calyx about as long as Tube.

Genitalia Organ from Fleming was sent under the name of G. Sceptrum by Walpers — and I suppose is stowed away in your the with Sceptrum. If you should not have it, I of course will return the specimen. I suppose there is not your description.

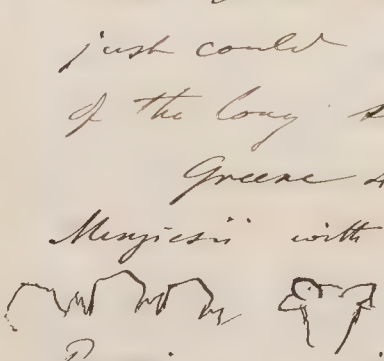
You have no right to suspect G. barbellata which is a good perennial. If you come to examine the base of stems you find the scars of many years' leaves and traces of old stems. It is one of those regular

St Louis Sept 11 75

Dear Gray

Your p.c was received — letter awaited.

Our about Gentians came a few days ago. Yes, I had seen a specimen of that Selligen, and thought very characteristic; but it was in such bad condition that I did not attempt a description just could make out one or two of the long setae.

Greene 412 I thought might be Menziesii with a peculiar calyx  sessile (or bracts), like Parryi — if not Menziesii I do not associate it with any other. Margins from the dever. of folds may belong to receptacle, but 1-flowered! Seed of Greene's plant seems (overlooked) longer.

Parryi has several, calycose

single flowers, P. strongly keeled calyxes plain not keeled bracts; P. acutish, cal. rounded lobes of corolla.

Origanum I can hardly unite with affinis, which has always acute lobes of corolla; Origanum very small, round lobes — and leaves so different; habit of Scptrum, under which name you sent it to me. Affinis has broadwinged seeds — Origanum I do not know seeds of. . . and I what you think best — don't care.

— You don't want to be bothered with other things; but coming among a large patch of thistles I found my P. altissimus & discolor mixed, and think it all the same — our cultivated discolor I suppose is ~~[illegible]~~ what was called altissimus. But what is the true altissimus? Did you ever get it from this region? I should like to see and compare it. Waiting for the promised letter I close

Do these specimens of G. barbellata satisfy you?

Yours very
G. Engelmann

Naples Sept 16 75

Dear Gray —

Confounding specimens made me, some time ago, recall my former announcement of Cuscuta cuspidata in Illinois. Looking over the Cuscutas I lay my hands on the original sp. and send you a part in proof. C. cuspidata then is really in the territory of your Manual.

I hope you got the perennial G. barbellata safely. The sp. with the stems of last year preserved is the only one I had, take good care of it; — but by soaking the base of any stem it is not difficult to find the rings (traces of leaf-pairs — 2 for each year) and traces of the insertion of the Kin. stems of former years.

Overhauling Cuscutas I found a California small fragment sent by you 1872 — but therefore I have added "Mare Island"! — I have nothing like it from California; it is C. decora with dep. campanulate almost globose flowers

ovary & capsule with very short styles. Can you find what was meant — where from? The only other P. decora I have ever seen from Calif. was collected by Bolander on Clear Lake, [illegible] on Senecio; this was very long, exsert, styles.

Then there is a Cuscuta collected by Kellogg & Hanford No 780 — California — but no further locality: I suppose you have it. Please send me all you have! My poor specimen, sent by Eaton, indicates a new species — but too poor to make fully sure. It is a convolution of very thin stems with a few small undeveloped flowers.

Yours truly

G. Engelmann

Dear Eaton,

Send Engelmann this (quick!) — v. good flowers of it. & oblige

Yours truly

A. Gray

I have sent all there is — He had 'em before.

S.E.

The only numbers of Bigelow's Carex I can find, are 3 & 4 C. aquatilis, 5 C. glomerata, 6 C. decora 8 C. inflexa; (another is C. arcuata perhaps?)

Eaton has sent all the sheets of Kellogg 780. It proves to be C. arcuata, which I had seen from California.

Can give you C. decora, on request, Oldenburg.

"Did you get all the gentians I have sent?"

I suppose I have and reported on them last spring – New Berry & Drummond. It seems a stretch to unite the Cattes with affinis but I have written you about it a few weeks ago.

Stow Sept 27 1875

Dear Gray

Calving season soon after the rut & uncertain and changeable fall – so I am quite busy and have had my wife sick with the scarlet – No leisure nor spirit to work – but am finishing now your Carexes (to me!) satisfactorily!

You sent two forms of Wright's Moore island, San Francisco Bay, – mixed. He at the time sent me two distinct, separate one, on Grindelia is C. subinclusa, the other, on Artemisia racemosa is what I call now C. saliva

I had been quite sick of Cercocarpus and had not looked at them for many years, only putting away all the material which came in. Then I have lost the run of some. I have a Cercocarpus No 3 & No 4 (both C. subinclusa) without any other mem. I enclose a part of the paper, in which one was wrapped up. Do you or Mr Watson know who could have written that?

It does not matter much, however; I suppose one of the old lot. as Jos. B[illegible] [illegible] her handwriting.

28th Wife went well again.

Cercocarpus Ind. — here they are.

Have you raised any of your Stone Mt Pentstemons? Else I could send you [illegible]. It is curious

Yours Truly

G. Engelmann

Of your Cercocarpus Californicus I have:

✓ C. Californicus 1803 Hartweg, proposed from you
✓ Bigelow on Dalea spinosa
Fremont on Eriogonum & Monarda 444 & 506
✓ Torrey 325 (from you)
✓ Bolander 5555 — Cover on Mt Mohave
✓ C. Wright on Gnaphalium, Mexico
C. subinclusa ✓ Bolander 2436. 2674. 2698
✓ Cleveland, San Diego (from you)

All your others I have not — [illegible] from Bol[illegible], [illegible] numbered all subinclusa, no [illegible] among them. [illegible] plant the subinclusa [illegible]

C. [illegible] the new one Wright, Greene 321 [illegible] 779 Bolander.

And C. [illegible] Torrey (my old C. Calif. [illegible] ? squamigera) and Torrey 29, [illegible] 914)

leaves lobed or only angular

My botanical friend Mr Letterman has found Calycoseris in this County and sends fruit — To me, who has seen the plant only in flower, it was new. I dare say you have seen it, but I send a few, and will get him to send ripe fruit. He will get Rosa setigera for our Sargent, which please tell him.

By the way, Parry's delightful Mentzelia S. Utah is a good species, such I have found in Carson City — in fl a fruit — day flowering, yellow!

M. chrysantha, n. sp. I have put aside fragments (all I have) for you. Brandegee had it as M. multiflora, just as Parry.

I enclose a miserable fragment of the Lupe-aster for Bogoni

I had named that Viola V. pennsylvanica foliis, but conclude, it must be Beckwith — what say you. You shall have a better specimen if you want.

Miami Oct 18' 1875

Dear Gray

Here is a batch of questions and demands. The Abies question gets into an interesting and I hope, more promising state. More anon.

I get your proof today & return it. Thanks for improvements of MS

I do not understand the mark (?) before C. Lemmon applauds it. All the 5 were coll. by Wright in Arizona and credited to him and that country in Monog. Cusc.

You omit my explanation of the name Cascata! Well.

I should like Wilson to look again at the 4 leaves, representing 4 distinct specimens of his Utah Abies.

Will try and get for you Sax. ifo Forbesii and Calycoccarpum, soon now.

Keep the Antibes things till other things come to them.

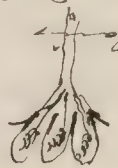
Yours truly
S Watson

Circular addressed

Circular addressed Sheet No. II (no. 1.)

Death flowers inserted at the division of the Lobes – Here differing from Gilliam and Quintana where the stamens are inserted in the tube.

Note so you give the Lists as cons the tube of Gilliam? & the division of the Lobes on the inside of the stem? "Stamens inserted at the base"



Selenothm Gairdnerii

Non Common – grows on gneissoid hills on Pueblo of Laguna. Common thereafter – up Pecos. Common especially along arroyos and streams.

Mr Elliott asks James Shriner & Co. complete – Please, bring me an Eupatorium, Aster and Senecio as may be dry. Remember. He thinks it must be a high Cotton plantation

and serotinum, both common which I think likely.

[redacted]

of Azolla but he has found none where I used to see acres 15 years ago.

If you have any thing of Palmer's about Agave, specimen or notes, please let me have at once, as I am finishing my Agave paper.

18th In the Annales des Sciences Mr Bertrand publishes the first portion of a lengthy paper on the Comparative Anatomy of the stems and leaves of Conifers. — (Second part published?)

Thomas, in Bringsheim's Schrb. IV. p. 27 (Anatomy of Conifers leaves)

The first you sent me and I returned it as shallow and of little value and made no memorandum of it. The other I have not seen; Could you lent me both again for a week — and a second part of the first if published?

A year or more ago I sent you my own Catalogue of Lindheimer's woods etc. I suppose you have seen what you wanted — so, I should be obliged to you to return it, as wanted here.

Do you know of a Fagus ovata in Northampton Co. Pa.? If so, please let the Author know — he now is British Consul at Rio Janeiro.

Monis Oct 25 1875

Dear Gray.

Your letter of 22d rec'd and Catalogue of woods, as far as it goes!

You will now have my living Agella also!

Yes, write with the things till the arrival of Palmer's box, from which get every thing in my line — all there is — (it is better to examine the whole lot) and I will return soon — Desv. Arnott. Conif — Juncs — Euphorb etc, in short, my pets!

But does Palmer give class notes? Locality, Date, size etc etc if so. I wish them also of course.

I write at once principally to correct an error into which you have fallen about Cirendia. I did not mean Griseb.,

Cicendia exalbata, but his and your Cicendia quadrangularis and my diagram referred to its stigma and the stamens inserted ~~in~~ about the lobes, to its stamens. So you better alter these things in Flor. Calif. as long as there is time.

Got today a Pamphlet of Angels (sent by whom?) where he is still more savage on Vitis; you are said by him to have united "Thunbergii & Labrusca — a great mistake — and a terrible idea & Labrusca — fully as bad or worse.

Yours truly

J. Engelmann

Cupressus I have not worked up yet.

Yes, Agave is my first need.

To Watson my thanks for the scanty information about Abies. If you send the Photographs with the result of the things I will name and return. I probably have most of them myself.

[illegible]

[illegible]

Here is a largely magnified figure of one of the smallest or [illegible] plant with a single [illegible] leaf [illegible] a leaves.

[illegible]

[illegible]

Thanks for the plant sent with Brewers package —

Lindheimer has not answered a half a dozen letters I wrote him which I can not explain as he continues to send me his paper.

I shall send you shortly seeds of Yucca brevifolia & Whipplei and others.

[illegible]

Have you any? [illegible]

Yours Truly

J. G. Lemmon

Thursday 8 Dec 75

Dear Gray.

Thanks for the Erythrea I just rec^d by way of Dead Letter office — rather late now. But you don't have a good way of packing plants — they are again broken up, just as that Verbena was; here I get a lot of Grape Spores from Amherst in best condition, V. riparia — either not sent in letter, but by package and numbers.

My bot. friend Kellerman has sent Calycoseris Mosa vitis & Sax. Torreyii — Shall I send them in cold weather, or wait till spring? —

He complains that such an infallible pope (in botany) as you should call the Menispermaceae shrubby and for the life of him, he can

I am printing Agave now, hope to send copy soon.

I wonder that nobody alludes (that I have seen) to the analogous position of Marsupialia among Mammals, where we have the types of gnawers, ruminants, carnivora, etc foreshadowed and combined with an otherwise incomplete development, which places them at the foot and the dawn of Mammals.

I have had fresh flowers of Agave Shaerii in November, to examine — Nice that!

Yours truly

A. Shaerii will be the Agave of the nursery men and amateurs.

J. Engelmann

not find a trace of shrubbiness in Calyx — he is inclined to consider the plant wrong, rather than you!

I have put him, zealous as he is, on Sugar maples, which I really think are two (such a nigrum) distinct sp. — The farmers say so and the appearance of tree, bark, fruit, leaves, spikes it. He is just the person (a country teacher — like Buckley & Wright were) to devote his energies to such things. — Will examine further next spring.

He is now also after the Hickories but I am afraid his C. sulcata will turn out tomentosa; he now sends me a lot of winter buds of all kinds and a hen.

How is the throat with you? I am just getting over a severe bronchial attack with thoughts of Florida etc etc — but getting better all is forgotten! —

Eichler has followed Braun in placing the Gymnosperms at the base of all Phanerogams — between them and the ferns. Braun in his recent paper on Cycads has given many reasons for it. And Geology is entirely in the same position. — Conifers in the Devonian and Carboniferous!

Why not adopt this plan? I would! Bentham should — they carrying out his great Contemporaneous views (R Br) to their logical consequences.

Commerce in the N. Calif.!

I got the other day several Conifers seeds for — Missouri some — sent some to Sargent who was delighted with the specimen and the proposition.

St Louis 31 Dec 75

Dear Gray

I am on my legs again and hope to go out and see patients next week — have sent off Pine article (perhaps too long?)

No I think from what you say, I do not want Martius on Agave. My paper is in print: A Shawii is a splendid and peculiar plant

Hear often of Parry — got today a P.C from him mated: his sent to Boston!

Some weeks ago he sent the remnants of a Guatemalan plant, which proves the an Eustoma, probably new, E Varyanum! I enclose part of the seeds and an obtuse fruit. This today made me overhaul Eustoma. I think I have exaltatum from Gregg for Magellan Another species I have often from Gregg & Wislizenus, find a Mem. that I have sent you also No 213 from Saltillo

25 years ago I named it E. grandiflora. I have not seen it in Mr. Chandler's grandiflora have acute fruit. Seeds of E. exactly like Erythrina! Stamens not in pairs as Gray & Chr. said, but like Erythrina in tube. Can it still have found E. excelsa in Arkansas? That must be Rumbiana!

Look for that Gray's 213 and tell me what you may have made of it.

Getting so deep into Mosses that I do not know whether I shall come out. Here is Sullivant & Lesquereux keeping sending specimens! And those I most want (Oregon Valley grandis fruiting branches) they promise but do not send.

Best wishes for the new year

yours truly

these days those plants and wish your climate — here it is today 74°!

I am slow, and ought to get 500 years old to finish an ordinary mean life work. I only now examined some of the plants collected 1856 on the White Mountains. Without knowing it, I gathered two dwarf willows, i. Cordata and i. argyrocarpa. One of the prettiest characters of the former — at least in all my specimens, is the unusually long petiole, which, if constant, ought to be mentioned. for a willow really curious!

Erythrina & enclose, and you
will find that they are not exactly
globular, but more of this shape

and all are reticulate-
favose while Fri; makes
them smooth!

is L. Nuttallii. Grisebach says: sericea Lewis: they are all negro or rediculous.

But is the size of stigma, size of anthers & character in lobes acute or obtuse in same species? peduncles long short or none in same species? Then, where are the characters?

Thanks for Physalis notes; hope you will grow Cobaea and Bartlettia from my seeds. Is Guernsey Nicotiana growing?

O yes I want Guernsey Georgiana. Your Isoetes I divided with Braun to whom I sent half; my half is growing.

Have to see patients now — boys at the door — More anon

yours truly

G. Engelmann

[illegible] good result?
[illegible] magnetic [illegible]
[illegible] [illegible] [illegible]
in [illegible] [illegible]
[illegible]; call in Magnetic [illegible]
[illegible] strike [illegible] [illegible]
[illegible] would in [illegible] not [illegible]
2 silky velvety dividers reg. c
1 a circular [illegible] reg. c
6 red intricate petal.

St Louis April 28 76

Dear Greg

[illegible] wrong in keeping the books here till the cases are ready to be returned; thus, as the Cattes have not yet been thoroughly studied, I send the two books I have from you (Dingelheim and Annals,) and also your

San Diego Photograph.

In one of the Books you will find two Photographs of A. Shawii which I have to my paper; the explanation with a short Description I will send as soon as printed.

I also enclose a photograph of Dr Engelmann, taken a few weeks ago: do you recognize it?

There is no end of Oak investigation! I have this spring come across some interesting characters in the vernation of Leaves. find them very different in different species.

The kind of pubescence is also characteristic.

All whether you want your oaks back very soon or whether I shall send them soon, and all together when I am done.

We have a glorious spring and the miserable March is all forgotten and the croaking of farmers and cracks about seems to have been quite premature and unnecessary but it looked gloomy enough 4 or 5 weeks ago!

Yours

J. Engelmann

in Oregon. Hall confounded both Gr. & Sabeg — so Dr Lyall & Murray smelled a rat and called Lyall's plant (of which I have a fragment from you) P. bifolia which absurd name (Megarrhiza Californica!) evidently was meant for Heteropteglis. We call it a western subspecies of Balsam or a western representative species of the eastern Balsamica.

Enough today.

I have got no copy of Chief Job — but Extracts of My Castes part in it (by Express).

You send on what you have I believe I told you so in my last letter.

You say nothing of the dry chamy of Santa Barbara; here is such "chamy" on which I cracked some

Yours, truly

Engelmann

I shall pack Palmer's things today also a few other things

[illegible]

[illegible]

I read your notes with great pleasure — perhaps a little too partial! for I will send the papers to Masters as you suggest.

Continuing my work, I have again stumbled on G. Sinuata, which I had only partially examined. You see it seems from West Texas (Kimpie) to Coppermine and through Arizona which was singularly enough, not got by Palmer who gathered undulata over Wright's 20 or 30 times. Torrey's own Emory specimen and figure is a branch of the true plant and acorns of Wright's! which accounts for the prickles. I cut open one of Emory's acorns — lo and behold smooth inside. But this Emory

(by the way, I think I skipped for Wheeler & consult in with this plant as a blackberry) is a puzzle and a stumbling block. It is a cut-back or account of inferior ovules (!) & normal fruit if but a blackcap, because long styles, stigmas, not touching cup, and tomentose inside of nut in bowl, we have to make up our mind to have the best arrangements knocked on the head by such "untoward" occurrences! But such are "stubborn facts".

Yes we hope to come east in Aug & Sept - but do not know exactly how, yet. You go to the Mtns of N Car with Mrs G. - how would it do to join you? What is your plan, time etc. in all events I am afraid of Philadelphia crowd, heat, and fatigue for my wife.

If you go to N.C. Mtns look out for Abies Fraseri. The anatomy of the leaf is a splendid character for that species, and I have not seen it from any other but in all the others so called species prove to be balsamea. I have never seen good fruit of Fraseri.

You were right in guessing at the resemblance of Colorado A grandis with balsamea it may be a western subspecies. I did to give an "official opinion about it the other day to Vasey and have named it A. subalpina, as in Colorado and Oregon it is the highest abies form, above concolor & the Rocky Mts. above grandis,

between black and white
and destroy

[illegible] ness.

[illegible] that North Carolina [illegible]

[illegible]

Athens Aug 1 1815

Dear Sir

[illegible]

[illegible] and [illegible] for
of the same accident I have
delayed writing to you and perhaps
from you too.

I should be very sorry if
the plan I formed for the
Mountain, should fall through
but would rather be if such
a serious complaint should
prevent you. I hope it
is your stomach and not
your lungs which is at fault,
and in that case a little
blistering will be just the
thing for you.

Our situation was so
[illegible] that I [illegible] you di

[illegible] you [illegible] the
[illegible]
[illegible]
[illegible]
[illegible] from [illegible]
to Philadelphia. [illegible]
[illegible] North east would
depend on circumstances.
[illegible] plan could be modified
[illegible] I should not like
to [illegible] vestirating in Western
[illegible] Lost time!
[illegible] I [illegible] we [illegible] it
is as much for my wife
as for myself) would go
to the B. Mountains without
you or without other Company
I hardly know, scarcely
believe, but you must
make your plans irrespective
of any thing we might
prefer.

Philadelphia is one of the
main points in [illegible]
(it can [illegible] be
called summer) Campaign
the second [illegible]
to us quite new country
and such would be the
Mountains of N. Carolina. [illegible]
suggestion of yours [illegible]
seemed charming to me.
[illegible] as [illegible]
[illegible]
[illegible]
[illegible] the other [illegible]
[illegible] something about [illegible]
[illegible] etc.
Nothing of interest in
Botany [illegible]
[illegible]
[illegible]

I suppose you have [illegible]
have not heard from [illegible]

Memphis Aug 2 '16

Dear Grant,

Yesterday I wrote you, that I had
rec'd your of July 30th & that
all sensible people agree in your
plan of campaign, but that it was
rejected. Good.

Good in every way except your
proposition for us to go up the
Ohio. I have enough of flat
flat-beach country. It is
as something else — heated,
Tennessee landscape, and fever.
It is not farther to the wx springs
than to Paducah, perhaps nearer.

We may probably make it
possible to be at the warm springs
on French Broad about the 22d.
And our intention always was
to go to Philad. at latest.
The proposition to be attached
to the rearguard [illegible]
[illegible]

wife [illegible] quite exactly as [illegible]
month's [illegible] [illegible] as [illegible]
much over. [illegible] [illegible]
to take it easily [illegible], as
[illegible] day of [illegible] [illegible]
[illegible] [illegible] whatever journey
he may [illegible]. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible].

[illegible] [illegible] [illegible]
to you and Carey, [illegible]
are [illegible] with [illegible]
again. We hope to be
in time with 2 or 3 [illegible]
[illegible] on hand.

Yours truly
J. Kaufmann

[illegible] Ryan & [illegible]
with a letter to the Lilac Band
a unique specimen of
[illegible] with all his fine [illegible].

101 Grand Villa Hotel, Girard St
Philad. Oct 2 1876

Dear Gray.

Your letter came last night. I am sorry that — look at it every way I might — I can not be in Cambridge in time to spend at least one whole day with Sargent, much as I would desire it. As he is going away on Saturday the latest I could leave here would be Thursday morning giving me only two more days here. If I had known in time I might possibly have arranged it. But one day was spent in N.J. with Governor Heteroptyle (attacked by half a dozen Stripes of Linnaeus), two more in Wilmington with Canby; some were lost by the miserable rainy weather.

Our intention was to leave here Sunday morning by fast through train, be in Boston at 9.10 P.M. go to the Revere House and come to C. next morning, Monday. We might possibly get away Saturday morning, but then would not well get out Sunday Morning, and would interfere with your Sunday. So, let it be Monday Morning.

Thanks for your kind offer to take us in hand on arrival in B., but it will be too late, and we will manage. Till

next Morning. in Mass

Redfields brother died a few days ago. He also interferes with his and a little with our plans.

Your Umbrellas and straps are safe but couple be in your hands long ago.

Mrs E sends her love to Mrs Gray

Yours truly

J. Engelmann

Dr Mellichamp writes 1876: Have seen two species here 1, with follicles armed with soft spines; 2, "smooth or only ribbed" This last I have not seen for a long time.

He sends me No 1 (same as yours, with lobes paler and pubescent towards tip) but without fruit. It must be Walter, ---- Whoot. acanthocarpus, and the former his V. gonocarpos, (a good name for my Arkansas & Texas lacvis, macrophylla, viridflora,)

Nuttall gen 163 publishes the Cutler name for a plant from "St Louis" It may come up here, but I have not seen it. The ribbed follicles seem to characterize the plant every where and differing with from other sp. Walter may have two sp. mixed up. My sp. are more or less hairy or nearly glabrous.

I have been busy with patients all morning, and I am called away to a Consultation now - so I can not write much more - will not be in Town to morrow at all - at a patients 25 miles off - but may write more on Saturday or Sunday. Meanwhile George has sent you a big package of notes, which may not be all to the purpose; those, written on quarto letter paper and sent you many years ago, together with figures on tissue paper, are for you to keep. What else there may be, please return at leisure.

I inclose in this a fragment of my pale British Gentian, albeit, in doubling it up the peduncle broke off at the axil which you can stick on again. If it is true of any other sp. it must be of the narrow lobed G. obliqua (Pennsylvania)

I copy some notes made in Paris 1857 and also some sketches made 1835 how correct these may be, I do not now know.

But I must close, more probably Sunday. Only that I was, I think, mistaken in ascribing the broad lobed deep purple plant to Missouri; our plant seems to be the narrow lobed one and the other I have only from Carolina and Georgia — but shall see as soon as I have half an hour's time.

Mrs E sends her kindest regards to Mrs Gray

Yours ever

J Engelmann

moisten the bent petiole & edges of leaf, to straighten out

We are not in regular winter trim yet, nor have we got over the effects of the dissipation of the last few months — my affairs still in confusion, while you have been working hard these 4 weeks —

Mrs sends her love to Mrs Gray.

Yours, ever

J. Engelmann

Dear Gray —

I can not help it, though other and pressing business ought to force oaks in the background — but I have them on the brain, and the oak question will crop out — do what I may — (Michaux is modest distance behind — Abies out of sight!)

Looking again at our autumnal Q. Prinos I find it quite distinct from the Alleghany Q. Prinos Lin! This is Q. P. monticola Mich and ours is Q. P. accuminata. This latter I find from Niagara westward, collected it the other day on Goat Island, and again here — both have narrow as well as broad leaves, and that has made the difficulty and confusion, — but Michaux is accurate!

How far east accuminata goes I do not know, but all I have seen from East Tennessee, Georgia N Carolina Pennsylv and N Jersey is true Prinos with chestnut like bark that cracked while ours has whitish like scaly bark, thin, etc.

Now, I know that you care not just now to trouble yourself about oaks. But you or Watson will have to help me to ascertain what Muhlenberg and Willd (Hor Act Berol. — and Willd Sp. 4. 441) means with his Q. castanea if it a narrow leaved Prinos as I should think from the Pennsylv. locality, or if

† I find that Q. P. accuminata also occurs in Pennsylvania

it really our western acuminata?

It is important for the synonymy, but not for the name, for it could not displace Nees' name of the Mexican G. castanea, and for ours, if we can prove it distinct, as I think, we will retain the name of acuminata, which I believe is unoccupied. ×

A botanist ought to know and Michaux and Nuttall had the advantage of all of us.

Since I have seen the living trees by thousands I can not confound monticola and acuminata; the former, which must be the original Prinus, can not be confounded with the Cattus with woody scales though in Herbarium specimens they May.

Why did Muhlenberg & Willdenow give the new name of Castanea, when he had Linnæus' Prinus? Or did they distinguish two sp.?

De Candolle's speculations can not help me, for he is also confused.

×, Unfortunately the name of G. acuminata is preoccupied by Roxb. (De Can no 20)

Sargent has young plants of this acuminata and says he found it in the Mountains west of the Hudson.

Parry sends a fragment of Asclepias, the only one seen. It is very peculiar, but I think I have seen the same in your herb. I send a flower and a sketch — the latter for you, the flower to return.

I notice the peculiarity of a crested corolate process in the hood, from its upper part, the lower part forms a closed (as far as I can see) sac which in the dried flowers is included within the dark lines — something new to me.

If the species it should be new to you, I will send the whole specimen

Nov 15 76

I just have your letter, and come very near shouting hurrah for Arnottii! and for Anantherix!! I am glad you give up Gonolobus, and restore Arnottii. But the 2d Mellichampia does not have any better chance than the first — it is evidently an Anantherix — lanella, but no horn — and the above Calyx — Asclepias unites technically Anantherix with the large flowered Asclepias — your Mellichampia has the only character of the very long stipes to the very small pollinia! Too minute! Prof Gray would say. — I had long since insisted on Anantherix as a good genus, and the Connivens as one of the species — an excellent name too for this distinct southern species, while the others are western.

Is Torrey's Sarcostemma indeltum different from the Mexican S. crispum?

Our Amphilophis is covered all over with adventitious roots. — Will look at both forms next year. They grow both together here in a yard, on the same wall, exhibiting those differences

I copy for your benefit a rough sketch and note made in running over Brown's MSS in Berlin 1868 — These MSS and sketches are very rich in observations, apercus and keen conclusions

Corylus and Carpinus are no Cupuliferæ but Betulaceæ

<u>Castanea</u> has 4 spiny valves of fruit including 3 to 7 [in our Chinquapin only one!] often in part abortive flowers between two bracts

<u>Fagus</u> has 4 spiny valves of fruit, including 2 flowers; a central one being always abortive

<u>Quercus</u> has a circular hemisphereical scaly cupule, including a single flower

Cupule of Quercus and spiny valves of F. & C. are organs developed within the last pair of bracts, include a single flower or an inflorescence and are as yet unexplained organs. The scales of Quercus are not leaves [rather epidermal appendages] and have no regular arrangement [in Grates and others pseudo phyllotaxis sometimes]

I find no memorandum of Brown's views of Carya flor but took over C. DeCandolle's Mem, and find a curious mixing up of notions; bract and perianth are confounded or he does not know which to take for bract — prophylla and perianth or are all perianth to him. It is quite unsatisfactory.

I know that I always took the Shellbark flower for a naked flower, supported by 3 more or less connate bracts — something like the hazel nut — Corylus — flower. will have to reexamine next spring —

But our twin hickory is not dioecious [ive?] as a single flower may have two ovaries in place of the regularly single one, the perianth still formed by a regular perianth. But I repeat that it is singular how C. DC. wavers between bract and perianth.

Tell Mr Sargent that I have the promise of Ilex decidua, Forestiera, Paulownia, and nuts of Salvata for him. Have now quite a lot of various Carya nuts for you, ready to send with other things.

Poor comfort for Farlow. No Agolla to be found this year — none was seen any time this summer, where it was abundant last year!

St Louis Dec 3d 76

Dear Gray

Thanks for the specimen of A. subulata Decaisne (not Torr). Here a sketch of the flower, green (not white) Hoods remarkably bicuspid at tip. base of horn extending all along the slit hood, somewhat crested. — Colors of Calyx very small oval obtuse minutely pubescent.

Press for Sargent packed, but weather too cold — (2°) to send.

Dr Mellichamp sends a long account about Gonolobus — but as he has written to you also, it is useless to repeat. He says that a few months ago he sent you plenty of flowers; Can you let me have a fragment?

Walter's gonoraipus, then, is not accounted for; it can not well be the green flowering western one, Lewis's?

Among other interesting things Mr Greene sends Cercis corymbosa on Mediango! same as it appeared 40 years ago in Europe & have sent a notice of it to the Botanical Gazette.

Dec 5th

I send the packages for Sargent to morrow. In the box are a fine forge collection of Hickory nuts which will please you — also lots of C. sulcata and some odd forms among them.

My Helianthus decorticatus has made in our hard clayey soil only very thin stolons, no tubers; I think less than I found in the wild plant when I took it up. But it makes enormous stems and leaves and flowers abundantly. —

Yours Truly

G. Engelmann

Our Honolulu is the purple oblique with spiny fruit; may not the whitish one (my albidus) be a colour variety?

Vera Cruz. Jany 2d 1877

Dear Dr Gray

I arrived here after some delay Dec 28th 6 days from New Orleans. found that Palmer had gone on to City of Mexico. As it was cool & pleasant here I concluded to stay over a few days. and have been making short excursions in the vicinity, noting the vegetation and occasionally picking some queer looking plants. Have had a norther most of the time since I have been here. To day is warm & pleasant as mid summer in U S.

I expect to go on to City of Mexico by Evening train. will stop over a day at Orizaba. I imagine it is cool in the table land and not much to see in the way of live botany. will look over the collections & sights of the city

and vicinity before moving North
to San Luis Potosi &c &c &c
Please direct letters in care of
Dr. I. A. Shelton
U.S. Consul General
Mexico
and be sure give all the botanical
news. I enclose a cactus plant
picked up in Vera Cruz market
I am well & hearty after sea-sickness
The direct passage could be made
from New Orleans in 3 days
17 hours by Rail to city of Mexico
fare $16.00 2d $12,50
I have not heard from Palmer
how he is getting on. I think he
might as well have stayed over
here longer. a good deal to see
this oldest Spanish city 1519.
Regards to the Gamble Girls
C. B. Corey

~~Tige~~ objects ~~at~~ the same proportion, at the same rate of magnifying.

I note in the first line of both genera Persistent for persistentes

That will do for tonight.

I think I ought to send Brewer and your Oaks back, after carefully looking over them again.

Agave Shawii is in bloom now at Shaws. Those immense bracts distinguish it very much.

What may be Greggs 784 — a hoary low Gonolobus like Asclepiad, but with tubular flowers, pendulous almost orbicular pollinia, pointed stigma. I can not make it out. I had sent you one of Hooker specimens at the time.

Greggs Texians I have not from him.

yours tonight

Yours Truly

G. Engelmann

What is Cercidiphyllum from Japan? I find it in no book of mine.

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Feb 6 1877

Dear Gray

I got your card today. Yes, send me those Revisia & Remarks of Mr Nuttall at once. It probably anticipates me and serves me right — for keeping back is long; it made worse, as I knew that Mr Nutt. was working at such things; but his former publications did not seem to me to be of much value.

Your Asclep. to come some time ago — thanks! A good work, I would have answered it sooner, but wanted to go over Gonolobus carefully. I have finished that today. What a confusion those pods, without flowers, and fl. without pods make! This subserosus, which you probably ought to have credited to R Br (Cynanchum Lin) I have from Curtis and from Mühlenbergs — both say that the pod is muricate! Well Mr. will find out next summer. But here comes another trouble. In one of the many places I find a Gonolobus from Linden; leaf less pods and flowering sp. in same sheet, marked: pod circular in section — the other smooth sheet: pod wing-angled in section. Now, the flowering sp are all the same G. laevis, smoother or strongly hairy, with oval, or oft almost pandurate leaves subsessile or peduncled umbels — but their smooth terete pod, of —

I send you one, is a poser. It could not be Eucelenia? that has a slender pollicle. Nor could Cavis have both kinds of fruit? I have written Lindheimer about it, but he will scarcely help us — 75 years!

I have found a good thing; the ovary shows already distinct papillae, where the fruit is mucronate; and I believe, I first ridges in Cavis-ovaries — but cannot be so positive. I suppose in the fresh flowers there will be no difficulty about that.

Our Gentiana, which largest has growing, is G. Carolinianus — very deep purple — My Wisselia, from Georgia is neither very mucronate nor deep purple, rather dirty — but has the short oval bud etc.

G. sagittifolius, parvifolius and hastulatus I do not have.

Now about Asclepias. For my taste there are too many subdivisions — but then, it is to be only a key — It would not be better to be more systematic and adopt the same once for all with these signs e.g. after the § which marks sections or have first Number I. 1. — the letters A. a. α & that gives you 6 grades orders already then you may commence with signs ✠ † × also having the larger first — and more sign + or ++ only takes too much room. I must say, that it is difficult to make out the order in which your signs come; also because they are not pushed back (what is the technical term?) from the margin according to their subordination.

A few errors of the pen are p. 65 1st line
× ab anthers is remoti
+ p. 72 Poristemma : anther as long supra
+ p. 76 p. hirsutus corona 10-crenata

About the species I have little to say — that character of the Gonolobus or exit fruit, pubescent through second every day, has been mentioned by me as many body else; it is a very pretty and good one. Your quinquedentatus is a nice discovery; but my specimen shows two very fruits pubescently decurvis.

for A. nyctagiifolius you might have given me credit. And lanuginosus you merge in erosus this is I suppose correct.

I suppose the Red Anantherix Asclepiadea and the other genera will be as good as many others in this and other such families (as point — Gramina) But I object to your putting species characters in the genera, e.g. the columna & the proportion of the corolla, which is so excessively variable in true Asclepias, ought not to help to characterize Anantherix; the very distinct pollinia show that it is a genus, for which the good characters must and will be found. Think you discovered them in the Calla crista

I find among my foreign notes a few hasty remarks made in looking over Cesati's Herbarium, which may have some interest.

I forgot to have said a word about Cardiopteris — Good! I hope you will cultivate it. I notice here again that characters of trifling value (proportion of Calyx & placenta) are given as generic.

In the plate the sign of the magnifying ought to be marked; both are about equal. Do as the entomologist do, adding a line (I) to show the real size, or state it (1/10) etc. — If possible it is best to give the

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Feb 13 1877

Dear Sir

Thank you for the [illegible]
papers. They are not so formidable
after all, as it will [illegible] our
calling more [illegible] of them out.
I fear that he makes no confusion.
But what I complain most of is
his absolute and [illegible] ignorance
of anatomy, leaving every thing else
(flowers & pistils) out of the question
so that he also unite obscure not
and [illegible] in one section
distinct from all the others.
I will have to have my say
after all.
A comparison which is spread over
the whole would be more [illegible]
Hadle [illegible]

Yours Truly

[illegible]

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., [illegible] 1877

[illegible] Gray

Dr Brendel's paper on "Trees in Winter" and Cuts has induced me to examine a little into the matter. Though not always correct, it still contains a good deal. The opinion (at least, I believe, meant by you) that there is always a terminal bud is not correct. In Catalpa I find regularly a scar on top — of what? next fall will show. Silvertree has certainly in all shoots that I have seen, no terminal bud. The apparently terminal bud is in the large axil [illegible] follows [illegible] and that is the end of it. Hickories have certainly terminal bud, which is not an axillary bud of production [illegible] shoots [illegible] bud. Catalpa trees (at least ones, or (not usually), part in the latter case there is an abortive top, part of vegetation. This latter case is [illegible] in Philadelphia in [illegible] it is often an abortive [illegible] top [illegible] the [illegible] shoot [illegible] is [illegible] in same axis in the plant.

[illegible] 14th

[illegible] with the above [illegible]

days ago, when I got home today [illegible]

P.S. — Gentiana in printer's hand! Why, I have not entered up the Sunday [illegible] the allies! as I promised. Well too late now; but [illegible] Gentiana Wislizeni, of which Rothrock got a single specimen [illegible] I include fragment of it and send also one of the Wislizeni original; [illegible] specimen is of both. Labels inclosed.

also the Asclepiad of Gregg's

I have got among the Celtis, which have long since interested me. I find among Lindheimer, 1846 the original of Scheele's Celtis Texana; but what he sent in 1851 is I think C. reticulata; and the latter seems to be cultivated in Europe (at least in Berlin Garden) as C. texana. — Leaves very rough, cordate at base, obtusish. — Texana comes near our hackberry, but the color of the character of the nuts is not yet sufficiently established.

Yours of 13th rec'd in due time

I some Gregg's Asclepiad — which I can not identify in Gray & Hook — that tubular corolla opens upon stigma vertical pollinia — no fruit!

I wish you could send me prospectus soon as each one is struck off.

Yes, divide and subdivide, but make it distinct to the eye, übersichtlich! — and avoid those signs which only by their number become significance, ++ ++ ++ ++, and stretch out to abominable lengths.

"Agave Shaw" is in bloom and I am watching it develope & will report to Sargent about it.

Yours truly

G. Engelmann

Don't forget Cusuta. Have you any new matter? I have no changes to make or scarcely any in my old papers.

Febr 27

Dear Gray

Here the Drummondii seeds unfortunately not all are ripe still they show the principal characters well

Your Cuscuta and Rottbœll are in for my work now — just got a nice lot of cakes from Bebb; says he is tired of these things — doing nothing in them any more. Hope not!

Yours

G

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., March 2 1877

Dear [illegible]

I am ashamed to be obliged to write the [illegible] Pneumonanthe — seed — [illegible]!

Too much haste!

Looking over those seeds again I find that that Pampas seed looks rather too much like affinis — and it is affinis — a mistake made in Colorado, a wrong label on the paper.

I find that I have no seed specimen among all my normal Pampas, but I have a peculiar form — found by me [illegible] down, in shaded rich soil in upper Clear Creek valley, taller many flowered, Bracts as well as calyx membranaceous, the latter partly split (spathaceous) and in the very small or even [illegible] — [illegible] of Gentiana [illegible] elongated, [illegible] tips fringed. The seed of this

posse is very much like calyx but narrowly winged. I send you a flower (prepared fresh in Colorado) and seeds; specimens some other time. — Therefore Pharyngia may or may not be distinguished from Calycosia. If not, we shall have a genus which is calycose (about) without calyx (hence a non lucendo).

Another thing in looking over the seeds strikes me — Andrewsii and Saponaria are identical in seed. They are often confounded — the pales are of different lengths in the specimens — so that some are merely doubtful — may they not perhaps all be forms of the same thing?

Yours Truly

J. Engelmann

I saw yesterday Aspl. trichomanes & Hart's tongue. Nothing. What is the name Was at the Hot Springs, Arkansas 42 years ago.

GEO. ENGELMANN, M. D.
3008 Locust Street.

& John Smith's ferns worth buying?

St. Louis, Mo., March 27 1877

Has Cassuta Americana not been found in Florida? I will assume, it may be found there.

A letter from Caspary (Koenigsberg) says that Nymph. flava was known to him many years as growing near Mexico, where 1834 Andrieux collected it, but it is not yet described. It seems to be the only americ representative of the section Lotus. He says it is probable that Nymph. tuberiferaquifolia belongs to it and perhaps N. Mexicana Zucc. (non A Gray) Your N Mex, he says, is N. elegans Hooh

C says that Kalmiana is a good species and makes sterile hybrids with N. puma.

Dear Gray—

Today I get the sheet of Gentiana Polemonii and see that you are indeed quite close to Cassuta. Have only begun, but hope to be ready when you want it, if you are not in too great a hurry.

Send that Asclepiad of Gregg's to Meehan. I can spare you another little specimen.

I had occasion the other day to look over Androsace, and find that among all my Colorado sp I get no filiferum nor ~~[illegible]~~ Thurberi Hall's, nor Nivalian sp. It is certainly

not common; that I took for it were all slender forms of septentrionalis; the turbinate 5-angled fruiting calyx and above all the seed ~~x to~~ 20-30 times as large distinguish it easily from filif. Nobody, I believe has looked at the seeds. The chain of all the annual sp. (sept. filif. occid. elongata and maxima) are very nice but except the maxima, minute. Filiform is as big per the smallest, maxima the largest seed of all.

I got a few plants from a Corresp. in the Indian Territory to name. Nothing particular except a nice little Umbelliferous thing, which connects leptosciadis with Ammoselinum leptophylla and radiform. I enclose a sp. and propose to name it for its discoverer, who also found my new Scoutia a year ago, Oxypinum (leptosciadis) Butleri as we have already a radiformum. He must try to get this and the Scoutia coming season more abundantly.

George is, or has been in correspondence with your people about Pottery.

I ought to have asked you before about a sale collection of New Hampshire plants, and am well punished for rushing in! A sharp Yankee trick! Got miserable little scraps of things. Hope to avoid such traps in future.

Yours truly

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, May 1 1877

Dear Gray —

Are you aware of the Vesiculus glaber, with low growth (4-7' high) and seven lobes — perhaps Augusta Delp. Butler finds it in the Indian Territory.

What stuff those bot. papers have; somebody has seen Wolffia divide — like a Polyp. I suppose, and this propagate — not by branching or sprouting!

This was written long ago. Your P.C. just in. Yes, my dear old friend Braun is gone too conscientiously in his too hard work! He might have lived 10 years longer for his family his friends and for science.

He was born 1805 in Regensburg but as a child he moved to Carlsruhe with his parents, where the father was an officer in the Post-office Department. Just 50 years ago, in May 1827 I found him in Heidelberg as a student together with Agassiz and Carl Schimper where the closest friendship united. Since then I have been in constant and most intimate intercourse with him. The following year the trio were attracted to Munich by Oken & Schelling, while I research (Bonn) again in Paris — 1832 spending several months undisturbed by the violent Cholera epidemic then raging — Braun had then already written his

Brown differs from Phanerogams, at first instead of Phanerogams a regular.

great work on Phyllotaxis. While I this came to America Brown went as Prof of Bot & Zool at the Polytechnic School to Carlsruhe — where I met him in 1840 — 1846 to 1850 he was in Freiburg, where you became acquainted with him; 50–51 for 6 months, as Prof to Giessen — and since spring of 1851 in Berlin as successor to Link & Kunth. His letters at that time expressed the hope that there he would have more leisure for scientific pursuits, but he found that superintending the Garden, teaching and family duties left him very little leisure and the care of a large family did not permit him to shake off any duty that would help to make the ends meet. Thus never found leisure even to complete his Cryp work the Charae and to arrange and edit his vast morphological ~~studies~~ observations & investigations.

He was not friendly to the prevailing school of botany at least in its extreme exclusiveness.

His influence as a teacher seems to have been very great, however, and will be yet beneficial.

I prize very highly the series of letters his which date back to 1832. In looking over them I find that you left Freiburg "yesterday" (July 29 1850) after a much too short stay.

It is distressing to read so often the complaint that official duties crowd him down. Could he have acted as you did, in shaking them off!

I wrote to Mr Hall to Boolin, the letter was sent thence to Belfast and returned to me by the dead letter office! How reach him?

Carlsruhe hangs heavy on me; I try to write and can not get headway — almost as bad as I was there 30 years ago! Will try to finish now. Yours truly G E

Dr Gray's Cabinet Hours when he was in Carlsruhe he was with his daughter with prized the letter of Mr Hall & S's clean hands.

Marcia,

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., May 22 1877

My dear Gray

you have been shamefully kept waiting — but here is the Mss at last — you will have to look it over and trim it down! Please send proof.

I have ~~made~~ arranged the 3 divisions a little different, bringing first the largest; placing together 1 & 2 with capitate stigmas, and again 2 & 3 and next 2 of 1 together because of their circumscissile capsules. Thus the arrangement seems more natural.

I found no change indicated for the species.

I left the names of collectors almost all out, because already given in my synopsis — very few have been added since — but if you think best, those of the rarer plants can be added.

There was nothing new among your Cuscuta seed, except that your of Hall's is a form of C. cuspidata, while mine is C. arvensis, both on Cyclolomia!

Your silent monitors in the form of short notes or postal cards have

had their effect, better than more demonstration demands!

I just get Silliman with your note on Braun. Very good! – My Metternich wants his letters, seemed anxious to write a life of her father; question whether she can do him justice in a scientific point.

George will have been with you. His pottery seems to be working well!

Now for the revision of the Oaks and additions to our paper; and Reagents.

Yours truly

S. Lyman

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., June 6. 187 7

Dear Gray

I just got Solanum carolinense seed, fresh from N.C. Take what you want of it for Herb, and give the seed to Sargent — I think it will be quite an acquisition. Have sent some to Dr Masters in return for favors from him.

Also seed of Hymenopappus cor. Nutt. of last year. Don't know whether good both from Indian Territory.

Have sent you some plants through George. If he could not deliver them himself, he will have sent them. Look at the Colorado thistles.

Months ago I wrote to Prof McNab "Dublin", sending him my paper, asking for his views concerning it. The letter went from Dublin to Belfast and was returned not for 9 days to me from Dead Letter Office. The paper was of course lost. — Where should I send to Prof Dr H. McNab?

Did you get the Cuscuta in the sack of time and that they are off my mind; they have bothered me since 35 or 40 years, those Cuscuta! Love-vines?

P.S. Have you seen Mr Lemmon's Cactus book?

I just get a paper from DeCandolle on nomenclature. For the greater part I think it correct, but if an author (Hooker) says that Yucca tenuifolia is a Hesperaloë, I think it ought to be called Hesperaloë tenuifolia Hook. f. though he not expressly writes that name. But if Boerhaave says that Lepidocaulis is a tribe of Aspidistra does not follow that Lepidocaulis d'vaviaba is Aspidistra transitans Baill. In the first instance the name of the species is given, in the other not. The example of Beaucarnea is striking. — (With regard to the point of sections) I have a striking and doubtful example in Agave. I have 3 sections, spicate, generiflore and paniculatae, which Baker says are Manfreda Littaea and Euagave & all is.. Now Salisbury admits 3 genera, his own Manfreda, Littaea (Hook. & Salisb.) Agave Lin, which Baker changes into sections, if Salisb. changing Agave to Euagave. The proper way would be probably, even seen to give these names as synonyms to my sections; thus: 3. Paniculatae (Genus Agave Salisb.), — or would it have been necessary or proper to adopt to unmeaning names of Littaea and Manfreda as sectional names, having been proposed by Salisb. as generic names? — It is a fact, that Kunth Enum. adopts Gustes Littaea as synonym for his second section of Spicate Agaves — comprising both my first sections. Under A Virginica the syn. Manfreda virg. Salisb. is not even quoted. — Salisbury's characters of his 3 genera are unlicked.

DeCandolle's rule, not to make an author say what he really did not say, is very good; also his remark that there is neither honor nor blame in these quotations, but historical facts.

Yours truly

G Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street

St. Louis, Mo., June 10 1877

Dear Gray

Dr Millichamp can not find Genolobus tuberosus but hirsutus abundantly, of various colours, from yellowish to green, dirty brown and deep black-purple, sometimes different coloured plants twined together (from same root?). I send some flowers just rec'd from him. — G. tuberosus he has not been able to see again.

I have been flooded with budding and flowering oaks for the last two months, thanks to kind friends, and occasionally a piece of wood arrives, so that les richesses become — embarrassantes! But I have good results, which I will soon publish.

Nothing worth mentioning in Rothrock Cuscuta. Palmer's I have not seen any of.

Mr Butler of the Indian Territory sends a Baptisia which to me is new

globrous, sulphur yellow — not unlike Lencanthus, but well distinguished. Do you know any such? I do not of course mean sphaerocarpa, which he also gets. He also sends a low 2 feet high Prunus, perhaps P. Texana Scheele, which I do not know.

I have examined Hickory flowers. The "calyx" is composed of "bracts" of which the lowest one occasionally assumes abnormal position, but usually they form the "~~inferior~~ superior calyx" and eventually the husk, the 4 lobes of which correspond to the 4 bracts

Yours ever

S. Eng. Sherman

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, June 21st 1877

My dear Gray

Why have I not answered your letters and notes weeks ago, and joyfully entered into your plans at once?

I have been undecided and am so yet!

My wife thinks she can not get off so soon, if at all, this season. And, then, the fatiguing trip last year did her no good, and she fears she may not be better off on another one; the sad is, we are both getting old!

For myself, I feel as if I could not leave duties, undertaken, work promised, long ago. My continuation and emendation of Oaks — Rothrocks plants, which must be done in September, and parts of Watson's California flora. And here comes Watson to remind me, like a stern task master; together with your last letter comes one from him congratulating me on my splendid chances, but — but — where is H. Cliff??

The opportunity to spend a few weeks with you, and in a fine botanical country, in the mountains, may not come back — may certainly never will! And the possibility of having Hooker along! It makes me half crazy to think of it. I can not give it up so.

You must tell me all about the plan.

Who is of the party? You and Mr. Gray, who else? Has Hooker consented? When do you expect to be here? You must come here and spend a few days with us, whether we join you or not; that is understood; your room is ready. How long do you expect to be absent?

I have hardly had time lately to do or think anything out of my profession; having been up every night since 4 nights and am sorry to say, it takes me in the hot weather the whole next day to recover it.

Write me when once.

You must have got the plants, George took along.

You say nothing about that Baptisia from Indian Territory. Turn it over to Watson.

You may add to Cercis salina Coast from Oregon Gall to Santa Barbara Rothrock on Franklinia Shrub etc.

I enclose Bentham's note which was forgotten a month ago —

Mellichamp has now rediscovered Gordonia subnivosa (not corky) has sent me fresh flowers and old fruit — will make good specimens.

I suppose you are overwrowded, G. & Dive matters seem to be ready in 3 weeks.

We expect to see you here with us by that time, whether we join you or not. I hope you may, but it seems now impossible !!

Yours truly

J. Engelmann.

Geo. Engelmann, M. D.
3008 Locust Street

St. Louis, 187

[illegible]

harmonize is [illegible]

[illegible] hands or [illegible]

[illegible] rather too short

[illegible] to Christy you

[illegible] 83.

[illegible] i.e. [illegible]

[illegible] all, I believe.

[illegible] your plans, [illegible]

[illegible] with and scheme, but

I cannot make it, it seems,

I [illegible] have to let you go alone

[illegible] still, [illegible]

[illegible]

[illegible] or if possible another [illegible] to make an excursion to the [illegible] Mountain region. We ought to have you a whole week [illegible] not insist just now in this hot weather. Keep me posted!

My wife, of course, desires to give her several [illegible]

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., July 24 1877

Dear Gray —

I have got your card from Kansas City and this evening your letter from Canon with Euphorbias. But in what is being you are! If you are to be the Crake, big matters must be fearful, and will not do for us old slow people!

We have had cool and pleasant weather, even cooler than it was during your short stay, and see no necessity for leaving for health or comfort sake — but then!

You say nothing of the cakes of the Cactus rocks. I should like to hear your impressions.

The Euphorbias are 1. E. Fendleri roundleaved, undeveloped, which I had also found at Canon. 2. E. stictospora the woolly one, which Wright and Bourlier got a few specimens of, but which at Canon is quite abundant. 3. E. glyptosperma the [illegible] and notched with the angles. —

Nothing of the Opuntia and other Mexican scenery — nor Cacti — but I should not be too exacting. The Euphorbia in Question you would be likely to find on the hard waters of the Rio Grande.

I sent two Letters for Mrs Gray to Colorado Springs, where you will find them with this.

The package with your synopsis for Porter is gone. Hope they have not burned it at some eastern depot!

The strikes are mild here, but determined, and it is said that today passenger trains are also stopped. Our mayor is ready for any emergency, preparing fully but very quietly. It is hoped that this determination will prevent Pittsburg or Baltimore scenes.

Mrs E will be glad to hear from Mrs Gray, and hopes that she will have a quiet day here and there, to rest and breath.

I ought to be with you.

Yours truly

J Engelm

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Aug 20 1877

Dear Gray

Yours from Salt Lake came a few days ago, and now one from Palmer who missed you there and from Lemmon, who had not seen you yet.

Palmer says that you and Hooker had quite an adventure in the Mountains, & hope that no harm was done.

Yes, your way of travelling would not have suited me much, — I would always have regretted the opportunities — so near, and not improved. Well, chacun selon son goût.

I hope you will have brought special to prove your Abies Menziesii position. As I understand the matter, Abies Menziesii dont climb the high mountains, and what you found in the Oete Pass and in Sierra Nevada is nothing but Engelmanni. The form of the higher mountains has always shorter stiffer leaves the cones are purple or whitish, with shorter more rounded or elongated bracts

Sierra, as Sargent has already shown 15 years ago; the bark is always thin, truly cinnamon brown (or red); that of Menziesii in the Alcan Creek Valley and at Manitou (the only localities where I have seen it) is gray and rough, and as I have often said, the tree grows along water, off in boggy places the seed germinate in the bog moss best, it never forms forest, which M. E usually does. — What relation the gigantic Oregon Menziesii (now in California) bears to the Rocky Mt tree I know not, but probably the same as Douglasii in both localities, but enough — and too late for your immediate use!

I hope you have seen Bolander and have shaked him again — also H. Gard who is a good fellow, though he may have done great some harm at Vicksburg. —

In your "chase" I can hardly expect that you can help me any in the oaks; Agrifolia Wislizeni Lobatum in Chrysolepis are all right — but the White oaks!! Whether Douglasii does not run into mud lots on one side or into Garryana on the other etc etc. But why ask you? And still being a great deal rapidly may give as good advice as every little patiently —

We are well and "our juice was hope you will enjoy yourselves" Remember us to Mrs Gray and brothers: Yours S E

species? So I still stick in those oak bushes, which Parry readily distinished as hurtful to pantaloons or innocent.

I hope you have seen my cousin Hilgard and have warmed up your Bolander.

Dortes returned the proofs.

Hope you are with Lemmon — and he has the pleasure of showing the beauties of his mountains and forests — wish I was with you!

Remember us to all your or rather our friends

Yours ever

C. Engelmann

GEO. ENGELMANN, M. D.
3808 Locust Street.

St. Louis, Mo., Aug 20 187?

Dear Gray

Thanks for the long and good letter from Yosemite, which reached me this morning. You will have found one from me in your Bangor in answer to yours from Salt Lake. — Glad that Mrs Gray stood it so well.

Yes, these numerous forms of Pondera may seem a nut to crack, but I believe that all those who have lived with Rocky Mountain pine no difficulty in uniting the forms. I know that the structure of the bark is identical, intermediate forms occur northward and the equally wide spread P. Contorta shows similar variation.

As to form and size of cones I give you a sample on a plate Rocky No, drawn for me by P. Elliott, which by the way was never published (if Buckley had only known that!)

Abies magnifica was a good hit of Murray's while our Californians worried

about that introvertable conabilis. Together with nobilis, which you will probably not see, but which Everyone knows well from Kew and other Gardens, it makes a distinct section of the genus and can not be confounded with any other; Murray piteously complains that it can not be distinguished from nobilis — that reminds me of the poor old waters & class Cacti — now again of Baker in the thankless task to class species by their leaves. Cui bono? Will it pay pins or your Agents Room and bear!

I am pleased to find that you have no hesitation to recognize A. Concolor in the Californian "grandis"! Yes, I hope you have seen and distinguished grandis vera in Mendocino. Hooker must know it from English Gardens where Douglas introduced it; it is also cultivated in San Francisco from Oregon seed. The readiest character is the more constant bifariousness of leaves, which are thinner than A. Concolor deep green above and very white below (see of Concolor). But you will not of grandis if you have seen that in Mendocino — wish you could see and compare the trees on the Columbia River. Up the Mountains there you would see casiroaspa again (our old Class — Creek grandis) which you must have seen but did not write about.

I hope you will have cast a critical eye on the oaks — will have taken in a good impression of the Blue oak Douglasii, compared it with Lobata and Garryana and found them all distinct.

O ay, Palbrandis has nothing to do with P. ponderosa but may be a high mountain form of flexilis; it is much nearer Coulteri than the true flexilis. But P. aristata and Balforiana run close together.

Yes, Jeffreyi is the big coned, Benthamiana the long coned ponderosa.

I have not much to say of our here; the summer was cool and pleasant till within a few days, we have now honest hot weather, 94° in so, which brings peaches melons grapes to perfection.

I work at Oaks yet, and when I think every thing straight, there comes, no doubt, new investigation of San Francisco to San Diego etc. etc. Is G. dumosa different from G. undulata var pungens? Is the smooth leaved Olive-like species a distinct (Olive-oak)

~~of~~ delicately leaves of nobilis and magnifica. I have tried hard to find a character in the foliage, but have only partially succeeded, but think I can distinguish sterile branches as well as young plants. I am not sure though I have never had good specimens of nobilis in all stages (main shoot – very young plant – lower branches etc.) Lemmon has furnished me with all such, bark & wood of magnifica. – Is the bark of nobilis rough & cinnamon brown, like mag.?

nobilis in the garden is fertile in quite young specimens; magnifica probably in old trees only – time will show.

The barks may be no character, and still the trees different?

1. Cinnamon etc forms one section of Abies
2. Grandis & Concolor a second –
4. Magnifica and nobilis a ~~third~~ fourth
3. Religiosa and bracteata are near grandis section, but perhaps might be separated as a ~~fourth~~ third

Newberry says pg 52 "foliage mess over dark green above, silvery beneath" – that is the Colorado amabilis, but not nobilis or magnifica. – I want fresh specimens from the Cascades in foliage & fruit. – Can Newberry have mixed up the species?

Now you have my say about Abies. Give me yours about Quercus!

Yours truly Gilbert

GEO. ENGELMANN, M. D.
3003 Locust Street

That Sacramento Pine I take to be pinaster. A young cone and young leaves of this year would have made it easier to decide.

St. Louis, Mo., Sept 27 1877

Dear Gray

So you are back, full of facts and theories! – From a short note with a Pine sp. I hoped to see you here, but you did not say, where an answer might find you – so I wrote to Parry and he just informed me you had given us all the slip and would be back by this time. Today I intended to write to you to ask whether you had any thing to say about Oaks – and here your letter comes full of balsamic fragrance. Well – you, and still less Hooker had no leisure to give us a few more days – I understand that well, and must be satisfied.

I hope Mrs Gray has rested herself well this time and both of you feel in every way well repaid for the fatigue.

I had seen already in Gard. Chron a note from Hooker that P. Menziesii & Douglasii belonged together which I judged a little hasty. You express the same opinion. Parry says he's lived to argue the ~~the~~ mooted question and will let it stand on its own merits. I have already written to you about it to San Francisco and have nothing more to offer. You have not seen the blue white Menziesii in the woods, because you ~~really~~ have not seen young trees; – and there are two forms, a white and a green one,

as of a great many Conifers.
I would expect Menziesii in North California as it is in Oregon, but have no specimens. Hooker's I have always taken for Menziesii.

Picea i.e. Abies! Why perpetuate Linnaeus error? Better follow Link and all the Continental Botanists.

Better leave Lambert out of the question. Douglas name is sufficient to settle the species, he saw the colossal tree on the banks of the Columbia River and named it for its size. It seems that the Cones of Douglas grandis & amabilis were sold at the Hort. Soc. sale — perhaps and to Oxford — I could not trace them. — But the harm is not great.

I think I can readily distinguish grandis from concolor (= grandis of the Sierras, Lasiocarpa of nursery men and Lowii Gord.). Send me specimen of your Shasta Grandis, and sprigs of any doubtful thing!

I have a few leaves of the original for Doughty of New York, the type of Hooker's lasiocarpa and they are identical in structure with my subalpina (Murray's Gigantea) McNab has come to same conclusion, from same source. No doubt about it! but Hooker's "long leaves" can not well be understood with that specimen before you. Perhaps he had others of the Sierras before him. At all events those "longest leaves" have misled his followers, who named lasiocarpa the pine with the longest leaves — i.e. concolor forms. — And then "leaves 1-1½ inch" is not so long! you can see it often in subalpina and grandis & concolor have them often so long and longer.

Dr Hooker could not see it differed from concolor there is an end of all specific character. They belong to different sections of Abies even in the same tree & ~~take~~ know that there are forms of one which simulate the other. In passing hastily such trees — perhaps with railroad — I grant that they may be thought to be identical.

The difference of subalpina & balsamea is slight — I might say a geographical one.

I can imagine that there are such forms of concolor apparently passing into grandis.

Why I know that amabilis Douglas is not that of the Californians is based on the fact that none is cultivated in Europe from Douglas seeds, while there are two of them (both, to me, forms of grandis) in the Gardens both under both names; the amabilis of Hort. Edinb (grandis, Drapiana) is the same with Newberry figures under that name and which is apparently distinct enough from the low country grandis. I take it to be a dense-leaved (much like Nordmannian!) Mountain form of grandis, which richly deserves the name of amabilis.

What you say of nobilis and magnifica might not surprise me, on the contrary I should like to see so insignificant a chamit as Laight of Brad — which is a sectional (with Nature even generous!) chamit in Books, destroyed, at least as such. — Moreover Murray has long ago bewailed the impossibility of

Abies Hell. not specific in Oregon. Both confound them.

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Oct 12 ... 1877.

Dear Gray —

Your of Oct 9 just at hand.

My oak-addition goes to the printer to day — but before I can do any thing for Watson's work I must fulfil my promise to Rothrock; have sent him first installment already.

I see a little more of our native oaks and they perplex me more! Cocinea with rubra leaf; rubra with palustris leaf etc, and so hybrids either.

Caspary has lost his wife, Braun's daughter, Marie, same sickness as her father.

He has flowered Nymphaea flava, too late for seed this year.

You will find that I appended Q. vacciniifolia as a subspecies to chrysolepis and Q. frutiosa to lobata — your sheet, rowbook.

I had hoped to get something from you about Q. lobata, Garryana and Douglasii — I think I can distinguish them well, but seeing 1000's is a very different thing from examining herbarium specimens for the purpose of scales — but what is the Branch? I make you sent; ~~you say nothing about it — therefore~~ box of sheets.

the California form of concolor, called Cassiorarpa in the English gardens!

Douglas did not get grandis on the Cascades -- at least it is not a Monitor form but a tree of the valleys, and perhaps lower slopes. -- In Philadelphia the Oregon people had an immense section of it. Hall, perhaps, can give the best account of it. Having lived among the wood cutters his Arcuthobium is from that tree, and the branches are in your hand with the parasite; Lyall mixes both subalpina and grandis, sometimes I believe in same number. from Hooker's description nobody could recognize Cassiorarpa, that is certain!

McNab recognized the tree from leaves of the original sp. of Cassiorarpa in the Kew, as I said, I have found that the longest leaf of that specimen, Douglas! is 15 lines long. As I said before, the seedsmen took hold of asperiora with "longest leaves" and named it Cassiorarpa -; and that is the Sierra concolor, leaves longer and narrower than in Colorado & N Mex.

You recollect that I proposed to drop Hooker's name but you objected, that if I dropped it, somebody else would unearth it -- McNab has done that now! nevertheless, it might be dropped -- for any reason of Cassiorarpa [illegible] -- Years ago I had named this subalpina: Cyclolepis, because scales usually narrow, roundish, often curvate.

Jeffrey has found it near Shasta, where concolor must mix with it, as do the Cascades it mixes with grandis (Hall, Lyall)

it is not the shortness of the leaves which characterizes subalpina, but the shape and contour, and cones, etc.

As to Mengiesii & Douglasii -- same, too, are the limits of alba (or perhaps nigra)? Yours ever E. L.

Photo to Gray

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Oct 17 1877

Dear Gray

Together with your note of Oct 13 came a letter of Bradegee about Ab. Mag. & Eng, which he has been settling for seed for Sargent and has closely observed. He finds them distinct and finds also that M. is lower alt. and near water. I forgot to mention that the seedlings also differ, let Sargent examine into that next spring. The seedlings of M Perry & myself only could find in the bags!

He has also studied both Colorado Abies.

I won't insist on the Madrono Abies but think I am right. If you have any madrono and inland species, send me a sprig or a few leaves.

I should also like to see those long Cassiopeia leaves you speak of. As I said before I doubt object of dropping the new Cassiopeia, which is not only unmeaning but is connected with a misleading description.

And Amabilis I have oft repeated, that there was no such tree as the high Sierra magnifica in Cultivation in England, from Douglas' or any other

seeds, until some 15 years ago the "magnifica" was imported. And the auricula of English gardens is a different thing — well figured by Hooker — as far as foliage is concerned. I don't know whether he collected any thing of it. I could not get a sprig or leaf from him. Enough!

Aristata and Balfoureana! Yes I have Californian Balfoureana, from lower down, not from shasta — but have seen shasta cones from Jeffrey — Kew & Edinburgh — long, cylindric, awless! My cones are (and seedlings raised from them) not so long, but awless. I come to the conclusion that they are geographical forms of same species as flexilis and albicaulis are.

Rocky Mts	Calif
flexilis	albicaulis
aristata	Balfoureana

and in that a arizona are intermediate forms.

I would fly more on leaves of all grades (sterile, fertile, and of erect shoots) — in abies, then on cones.

I was (for once this season!) out botanizing yesterday and got nice acorns and specimens of Q. rubra palustrifolia.

Q. palustris longiglanda

Q. tinctoria rubrifolia

and had the other day good fruit of my so called Q. rubra x imbricaria which proves to be Q. coccinea-imbricaria = deltoidea. I send acorns of all to Sargent, who I hope will appreciate them and take good care of them. — Pressed up for you, etc.

My oak addition is in print.

Glad you saw my cousin Sargent;

You do not say anything of Bolander — will he rally again to Botany?

Yours truly

G. Engelmann

How does Mrs Gray come on after the fatigues of that overland trip? When will you commence with Synopsis again?

St Louis Oct 21 77

Dear Gray.

Look twice before you throw into one heap Alnus magnifica and nobilis.

I have no doubt — in fact I know, that the barks of nobilis are more or less excent, even scarcely so — but I should think they are never so short as in magnifica, and cotyledons and foliage are different. I should like to examine good seed, cotyledons of ~~robusta~~ nobilis — the seed of magnifica I know.

I am turning up Hawboom's amabilis — which is a peculiar thing — perhaps?— and perhaps ?? the real amabilis of Douglas.

Yours truly

Asa Gray

Vola!

St Louis Oct 24 77

Dear Gray —

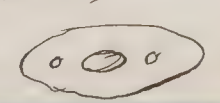
My wife will be delighted to have that humorous account of her travels you — Mrs Gray

Orlando — horrid! Can hardly believe it!

Kellogg's A grandis I had before, the Mendocino sp is just what I said it was — leaves even on fertile & branchlets emarginate and grooved — section no stomata above — or scarcely any in tip of groove

Convolor only lowest leaves on sterile branches emarginate; upper branches of mature trees all leaves convex and obtuse and with stomata all along — not only those of fertile branchlets

There may be intermediate forms, but I have not seen them

A. Balsalpina, upper  surf;

+ this gives the brown side the appearance of deep grooves

ducts in all the leaves in the parenchyma, not in hypodermis lower leaves grooved, upper convex.

Aloe Gals. & Grasses behave nearly so!

Enough today —

Yours ever

G C

Got a spirited account of your reading — & your trip, from Lemnon! Always a little flighty.

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., Oct 31 1877

Dear Gray

I see that Beccari is to fill Parlatore's place in Florence. — Is P. dead?

Your P.C just in. I send you Lemmon's article. I heard of it from California and asked him for it.

P. aristata I know only from Rocky Mts, but in Utah is a form east, with a west, which I have distinguished as uniseta also in Nevada and in California, on the Sierra proper from Shasta to the southern ranges the Balfourian which is scarcely anything but aristata

Flexilis & albicaulis may also be two forms of same species. I have seen the former also from California and the latter from Montana

Yours truly

G Engelm

Chen. anthelminth is certainly perennial! root with many thick long fleshy branches below the narrow neck

Mr Eggert has collected many western things along the rail roads opposite St Louis - there for in your domain

Leptocaulis patens
Krotkia speciosa
Salvia trichostemonoides
Solanum rostratum

You drawing attention years ago to the striped granulated nutlets of Scutellaria nervosa. S. parvula has the same

Eggert has got what he calls of Cive plants for tangent, will send soon; also the perennial roots of Chen. anthelminth

+ and I may add that the male flowers are twice or more long as those of the Colorado tree.

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., Nov 14 1877

Dear Gray

This morning I got yours of 10th and return Hooker's letter at once.

He ought to compare the South Californian ponderosa (P. deflexa Torr Bot Bound. r. 18) and still more the Colorado form with only 2 - 2½ inches long, stiff leaves in 2's & off as in 3's 4 inches long to appreciate the variability of the species.

As to Abies I have to repeat again, that the Meadows plant is a Oregon grandis, a coast plant. I can see no difference (I have a Oregonian specimen of 1866) except to shorter and denser leaves. In the English Gardens are both forms one under the name of Amabilis, the other as grandis; this 2-ranked, the other densely-leaved. When I was in England, they had the 2 ranked one in Edinburg as grandis and the dense-leaved one as amabilis; in Dropmore the reverse.

They must take into consideration, that their trees do not bear, and we know that the foliage of bearing trees or bearing branches differs from young & sterile ones —

The New ponderosa I take to be the form called Benthamiana

Hooker remarks that all handsome conifers in Kew are such, that of Pinus Lambertiana is no doubt correct — the above has little relevance in the present case, that of P. ponderosa

As to "lasiocarpa, Parsonii & Lowiana" they are "hardy forms of it" i.e. grandis, as Hooker says. They are forms, young, long lived forms of concolor.

What we do not know is the Alpine forms from Shasta to the Columbia River. How far does Concolor extend north, how far does subalpina (lasiocarpa Hook) come south. And in that region must be amabilis Dougl.

I have now examined Newberry's amabilis from the same region (leaves, scales, seeds) and find it an (alpine?) form of ~~lasio~~ subalpina and it may be the real Douglas amabilis — but then, none of the English gardens amabilis is the true thing.

The Meadowview plant has nothing to do with nobilis, with which Hooker brings it in comparison. Nobilis is toto coelo different, perhaps with magnifica to a distinct section; but as I remarked some time ago, both are distinct.

There, you have plenty talk enough for a while.

I am preparing my juniper investigations for publication: they will interest you. I have never spoken about them, because incomplete yet

Yours truly

no photo from Hayden!

G. Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Nov 21 1877

Dear Gray.

I have carefully examined your Comodlon leaves and send you sketches of sections. The Silver Mt is from a young tree and like all those leaves, thin. The fertile or upper branches have the Lo Oct and short leaves, or those sent in by Remy and Lemmon. — You are right, the grooves of both sides of Mendrib below are almost as conspicuous as in Grandis — especially in the Silver Mt young leaf — but then, they are always more prominent in the dry leaf. My sketches are made after well soaking them. See the difference in size of the vascular bundle & with the curbing sheath. In Grandis Dougl to which I am glad to see Hooker refers the Mendrib red and edge contrasting with the white groove — makes it more conspicuous.

I enclose a letter from Hooker, though expect he has all that already communicated to you — but I wish you to help me read a few words underscored with pencil and marked with a ? —

Especially am I interested in what

he says of V. albicaulis.

I got this fall specimens of this together with the first real California flexilis I have ever seen.

Albicaulis is cambroides of Newberry but very different from cambroides of Mexico, which is close to edulis.

Albicaulis attains a "stupendous age" how old, how thick how tall ?? Where did you see it.

The next words about the wood I can not make out. And what is "sand-blasted" which in comparison with Juniper California which latter interests me especially.

Did not hear of Jackson? He called 2 or 3 weeks ago when George was away, in the swamps, south, could not tell where to find him, promised to call again — but I have not seen him since. Must I send detectives after him?

Yours, Truly

S. Lemmon

A number

Silver Mountain
Gold

La Veta Pass
Gold

Iron of Shasta Mt.
Gold & Silver Creek
Gold

Iron Valley, Iron
Gold & Copper

Iron Mountain
Copper

30 Times

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Dec 15 1877

Dear Gray —

Just finished revising your and Brewer's Oaks, and will return as soon as packed.

By this mail I send 5 Copies of Oak Continuation
Agave Shawii flowering
American Sabinea

2 for you
1 for Prof Farlow
1 " " Goodale
1 " S Watson
which please hand over with my respects.

If I had time, I would rather go at Cupressus, but do not want to touch it unless I can make thorough work — have never looked at them.

Jackson came, but without any thing from you

Weather spring like, warm & clear.

You see that I, from others data, have come to the same conclusion as to the great age of Juniperus; — but the rings of "small branches" are very deceptive.

you will see Gilbman's observations on a "sand-blasted" Sampson Sabina communicated to me years ago.

If you want more of these papers of mine, let me know. If you have any of first part of oaks left, be sparing with them, I have given away all of mine.

Parry was here since Friday, left Wednesday — seems to be little prepared, but trusts to luck —

I wish somebody would take up the Cascades from Shasta to the Columbia. Abies amabilis etc.

I have to write so much about Abies that I have concluded, better to print. But you will be slightly horrified to hear that I feel like separating Menziesii (Pacific coast from northern California to Japan) from the Colorado plant. The former has real flat-leaves, stomatose & white above while all the books say: below taking for granted that the white must be below! Conc. oval not cylindric. — I have found my Colorado bark of "Menziesii" & Lowiana as different as I said they were! Yours ever

GL

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., ... 187

Dear Gray

I have now examined the proliferation of Cyphonema, which I found in the Central Park - N York - but it does not offer any valuable clue. The bracts gradually loose the turnid base and Corona covers and one of them bears a branchelet in the axil. That is all!

Your former Gardener was here on his way to Arkansas; I could give him some valuable information.

I find that many of your Fendler's N Mex Euphorb are not named. Here is a list of all of them

782 E. heterophylla
783 E. dentata
784 E marginata
785 E coralloides
786 E montana Eng
787 E Preslii
788 E hexagona Nutt
789 E revoluta Eng
790 E exstipulata Eng
791 E serpyllifolia Pers
792-3 E. Geyeri Eng.
794 E. Cata Eng
795 E. serpyllifolia
796 E serrula Eng
797 E stricto spora Eng
798 " "
799 E serpens
800 E Fendleri Torr
801 " "
802 E serpens
803 = 791
804 = 796

Lemmon seems to have found the same Pseudotsuga Douglasii, which you had noticed. I had a Postal today from him in which he does not mention weeping Spruce at all.

I just got yours of the Bachelors D.S. I return. I had a letter for him also a few days ago, and will send him seeds and specimens, not Lilium, we have not here. I wrote, whether I told you how delighted I was to see it so abundant in Rhode Island on hedges, roadsides, thickets; but seed were then not ripe.

This paper has been lying here for a week or more, but shall be sent off at once. I have also just got some roots of Rudbeckia Mastonii and seeds, which I send to you for the Garden.

The seeds from Idaho have come through you. Did he send you any? If not I will supply you: a Tree Yucca and an Agave.

Sorry to hear of Mrs Gray's cold. Hope she will soon get over it with care and you will keep well, also with care! I feel very well, but cough a little more.

Yours ever,

G. Engelmann

The bellbird-folks are getting frightened, I think, at the idea of a second Southern war. I send a letter on Southern war surrenders, I am glad about Jefferson, in fact we were so cordially wrong!

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Jan 11 187 5

My dear Mr Watson

I could not return to you your Euphorbia MSS without looking over the whole matter, and after careful analysis I find that very little alteration is necessary.

Your suggestion that melanadenia and polycarpa (a most unfortunate name) may be identical, I find fully confirmed, and my var. crenosperma is a transition form. I enclose a frond of a single specimen of Palmeri (you may have more of the same) of an erect form, very much like melanadenia but glabrous.

I also find my old theory of micromeris belonging to polycarpa confirmed. Parry sent a specimen from San Bernardino. I take it to be a depauperate form with leaves small and acute at base, small involucres, short styles, etc

Euph Palmeri is good, near schizolobe, of which we have no fruit. But capsule & fruit of all these perennial Euphorbia species are very much alike, and in size and shape often differ in the same species, if we have specimens from different localities enough to verify it. This is the case (with me) only of campestris and montana, both not in your flora.

I add that Palmer's 441 (1877) S. Utah, is my lunisia of which Parry had but a single more advanced specimen in 1874. Boissier has entirely misplaced it. It is interesting as having occasionally horned but usually only crenate glands, — it belongs to the Eulae and is well distinguished by the sessile obtuse-white leaves, etc. — That for future use if I should be unable to do the E. for Gray's.

Wright 1850 is a transition from minimum to polygonum. Palmer got it (mier.) on lower Colorado — it is entirely within your flora.

I distinguish among perennial Eulae of the S. West Schizolepis (Ariz.) Palmeri (Calif.) brachyom oblongifolium, lunisia (Utah & Ariz.) montana, cacumenis, and Palmeri 440 (1877) which may be called peplo~~phylla~~ florae. It resembles Palmeri in the broad obtuse at last deflexed leaves, but is quite distinct.

I see that Calliriche will come next in your order — you do not ally them with Hippuris etc.?

I suppose you have not only Hegelmaier's pamphlets, but also the California specimen which he describes.

You are right, that Rothrock does not print yet; but it is because Wheeler will not permit beginning before all the Mss is in his hands and I am thus keeping back the whole business!!

Oh the happy time when no driver is behind you!

Yours truly

S. Eng. Almacen

I have another Amphigyllum from Arizona C. semiserrata, n. sp. Tucson Dr Smart, 359 — Hb. Nyrie — Exp. at Ariz. — allied to floridana

GEO. ENGELMANN, M. D.

3003 Locust Street.

Dear Gray St. Louis, Mo., Jan 24-27 1879

I have many years ago got from Hayden a plant which I took for Nuttall's Gentiana Andrewsiana L. I get it now from Iowa. Requested Mr Jones to look up more specimens and also seeds. Do you know it? In Tow & Gr. it appears as a doubtful plant.

Studying Rothrock's plants I had to re-examine Gentianas, and I find a bad mistake in your account, page 120. You say anthers versatile in Douglasia, humilis and prostrata. I have carefully reëxamined the 2 last as well as verna, Bavarica, etriflora and a number of other old world sp. belonging here, and I find Griseb. correct for once, their anthers are all erect and introrse, while Pneumonanthe has erect extrorse anthers as is well known. Thus Pneumonanthe as you define it in § 2 must have added the anther character and that of the ~~others~~ erects 3 sp. above (~~at~~ Douglasia ~~is the same~~ have not compared) must be corrected!

Pneumonanthae spurious or gentianellae-formes, and P. genuinae.

You say p. 116 anthers -- at length retrorsely reversed -- why change the old sign for the word extrorse? But perhaps you are right.

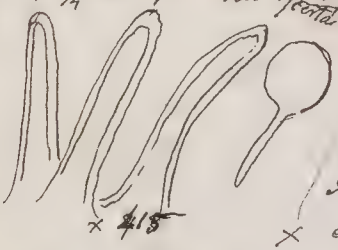
Pleurogyne is = Swertia with 2 funnelshaped fringed appendages near base of corolla lobes, which ~~approach to~~ are glandular-fringed in the bottom, -- ~~with~~ ovary bearing seed in two broad stripes, stigma vertically oblong

Bentham & Hook have an just appreciation of the versatile anthers, as they say in Pleuropyne "anthers versatiles respirissimi extrorsum reversae" — Such ought to read: effective for respirissimi!

I have now examined Douglasia and found it the same as Androsace with regularly introrse anthers, equal to Pneumonanthe. What Grisebach means by "mutant anthers" I do not understand.

Gentiana are then all good Pneumonanthes but with protruding, hairy, versatile introrse and Pneumonanthe & Douglasia extrorse & Douglasia the only genus among the latter!

I have not only seen the stigmatic papillae on Pleuropyne but abundance of Pollen and some with tubes adhering to them. The stigma begins 3/4 line from the tip and ceases as much from the base.



(certainly not stigmatose)

Why do you place p. 111 Pleuropyne with Gentiana as having no nectaries?

Seed of Pleuropyne oval, not marginal nor compressed.

× exterose is not always correct — though the filament is always on the inside of the anther, the cells often open laterally.

I am glad that you separated Erythr. calycosa from vernalis; whether the name is appropriate or not, I had a couple of years ago kept Greggs Mexican and Bolanders Yosemite plants separate one with acute (!) the latter with broader obtuse lobes. Rothrock is = Greggs, and if you will carefully soak the flowers you will find the lobes acute or acutish and often denticulate.

You say p. 111 of Pleuropyne "stigma sessile — undivided" Sessile it is — but there are two quite distinct linear stigmata and the tip of ovary is smooth covered with epidermis and not in the least stigmatose

2

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., ... 187

I continue my criticisms.

You say p. 110 that ~~Stam~~ anthers of Erythronium are twisted 1-4 turns. This is a mistake; the two halves of two anther cells make 4 lines which are twisted, and which you are apt to take for 4 twists. I doubt whether any anther is really twisted more than once or 1/2 around its axis. Try it! But you may say in what direction — for they are always twist. in the same direction: that left — I suppose you would call the cotton right and left!

I believe you have given that Croton falsely called by Torry and by Mueller by C. Lindheimerianus another name. I have noted it down but can not now find that — or where published. Can you tell?

No! The matter stands thus:

Croton Lindheimerianus Scheele, not Torry nor Muller
syn C. ellipticus Müller not Nuttall
C. extriguyenus Gray. Man

Croton monanthogynus Michx
C. ellipticus Nutt etc

Croton corymbulosus Engelm
C. Lindheimerianus Torr. Mull, not Scheele

I have to work up Rothrocks Croton etc and this last is among them; it is also in Gray.

Scheele gives a very correct descr. of his Lindheimerianus and, besides, quotes Lindheimer Coll, which is a verbal copy of my original label as to Locality — date etc. His only mistake is to call it fruticose, which it is annual and

this Torrey was misled.

The printer keeps me out of my paper on Abies, unnecessarily long, but I hope to send it this week. I have ventured to use the name subalpina, but, of course if lasiocarpa is insisted on, it must stand, as it has the priority — which reminds me of our Lemna Valdiviana, which could not have been recognized from the description, but was from a poor sterile Valdivian specimen, while Torrey's was well described from fertile plants and ought not to have been ousted — but where is the limit?

Yes, my wife has been much surprised and pleased by Mrs Gray's nice present and as nice letter — but her health has not been good, cold, fatigue, mixed with malarial symptoms have pulled her down and incapacitated her. She is better and will write soon; meanwhile she scolds me, and justly so, for not having sent a word of acknowledgement.

I hope the box is safely in your hands — warm rainy weather and expectation of a sudden change, which ought to reach you by tuesday or wednesday — with this letter!

Yours ever

J Engelmann

How they may vary or run into one another, given Sabe — and seeds we have only of one

Now to that delicate question about Cor. & Qu.

I can only say, to comfort you, that what I have to do for you — & for R goes together, so that with Calif. & Arizona will be done right. Guaymas is easy but Cor. will require a complete revision.

I had a letter from Clary today for City of Mex but, more anon, not much information for which I asked.

Yours Truly

G. E. Lyon

I loose the run of the many letters said you!

Over

Euphorbiae Cuba Wright

sent to me by Gray with private numbers long ago

1. 2. ?
3. 4. E. trichotoma
5. 12 E. prostrata
6. 8. 11 E. hypericifolia Linnaeana & Boissier.
9 buxifolia
10 pilulifera
13 = 547
14 ?
15 = 2013

distributed numbers

547 E. adenoptera
550 E. pilulifera
2012 non albomarginata, probably undescribed
2013 E. minutula Boiss per 1263
C serpens BOSK was mixed with it
2014 . 2015 E. adenoptera
2018 E. nyctagina Wright = Gris Pl. Wr. p. 21 1866
= E. Cubensis Boiss = DC. p. 1265 1866 !
Wright's name deserves preference.

Palmer's from Biscayne Key, Fla, sent by you long ago may also be adenoptera.

Jan 5 87
/78

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Febr 7 1878

Dear Gray

Yours, of Febr 2d when I entered into my 70th year, came duly to hand.

I had finished Asa's paper more than a month ago — but could not get my copies till a few days ago — here they are! Challenging your Hooker and Mr Nab's criticism and corrections.

Please hand the extra copies to Profs Farlow & Goodale and to Mr Watson. I also send one to Sargent.

I was amused to see a note from A Murray (I see he is dead) on Asa Convolor; it is all the same as Grandi of California, only a little more gray, leaves a little broader to — So say Mrs & I also! But Grandi of California is not grandi of the North Coast. —

I have your papers of Mr Nab's yet and mean to keep them a little longer. — He and I agree pretty well

But he keeps Conrolor and Louisiana (the California) separate; and grandis and amabilis (my grandis densifolia) also separate — and names subalpina with Hookers name lasiocarpa. —

These things are now off my mind, and patients are getting beautifully less — St Louis the healthiest city on earth !!

Weather will get — I see you had your storm in real earnest.

Jackson here yesterday says you are sick in bed — I hope it is more precaution than necessity — but please be careful — don't overwork yourself — Your printed sheets come rapidly. I got up to Linnaella a few days ago.

Jackson wishes to take a package for you in 2 days — but I do not know whether I can get the oaks together — will try.

Glad to see that Watson tackled the poplars — also, that a little corner was set in Sill. Journ. for him. — I am getting tired of Chemistry and Mathematics in it, may stop it. But what is the case in history of Am. Naturalist & of your protest on Copi ??

yours ever
G C

Dear Gray

I have now revised of Synopsis page 1 — 340 — with the exception of p.p. 327 — 330, which were wanting in the package rec^d today. I run over the pages to copy such notes as I may have made; no systematic revision was attempted.

p. 3. Lob. brevi**flora** must be brevi**folia**

6. Lob. leptostachya & spicata seem to run together with us.

10. Spir leptocarpa syn.: Bisnatorapus parvi~~florus~~ doxus Nutt. but I do not know where I found the name.

14 Why ἑτερα not ἑτερος ?

90. Why you make that a hybrid (mellichampii) of tuberosa and incarnata, is inconceivable; it may be an anthocyline form, but I can not see a hybrid in it.

97 var subcaulescens — — "may rather be A. virgata ~~Bell~~". Why not Lag. (see pg 96)

98 You might add to Nothocrestes: corpuscle unusually large, (larger than in any Ach. examined by me).

A. stenophylla Iowa to the Mississippi.

I do not repeat what I said about Gentianaceae

118 G. amarella at least German specimens are mostly (not rarely) 4-cleft at least in my specimens, but the authors, I see, describe it as 5 cleft flower

124 I believe I have said that Neuvogyn seed is thick and oblong

140 there ought to be a single * before G. Watsoni, in place of two

256 C. violacea — and West Missouri, Broadhead.

280 H. nigrescens along Arkansas River (far enough for the coast)

283 I. gratioloides syn. Lindernia pyxidaria for ori

306 V. stricta. The hybrid with bracteosa is also common here, and in Illinois

337 Glad you have restored V. bipinnatifida !

In my fine paper is a bad slip p. 7 l. 8 from below, dens**iflora** for dens**ifolia**. I see that Dr Martens reprints it — and that several communications on Abies have already come in — just in time. Good !

I enclose in return for Watson's Prun. maritima (rec^d a few days ago) stones of P. gracilis. The two shrubs come very close together. Tell him that Prunus & Amygdalus can go well together ! — . Never got the La Veta Photograph from Hayden. — How is it that I did not send the full grown foliage

of Carya salcata? too large to get a branch – but have single leaves. I thought I had sent some. Canby thinks he has C. microcarpa; he is to get it in all stages – I supposed it is nothing but porcina, which like the others is very varieble in size and form of fruit.

I am under the weather since 10 or 12 days, fever, cold etc. and can not work any – but weather fine; so. I hope to get over it by and by.

Yours ever,

G. Engelmann

April 2

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., April 17 1878

Dear Gray

Thanks for the Pyrenanthemum etc pages.

Canina is common in Missouri & Arkansas
Pyrenanth. vaseyi I never saw — should like a specimen
P. linifolium common in Missouri and southward — lanceolatum same.
P. muticum and pilosum (the latter common here and southward) I suppose you are sure that they run into each other — but I can not see it.
P. leptodon Geyer collected it on the western border of Missouri (not south) and you must have specimens from me — whether the same occurs also in N Carol.? Tullia does not grow here or westward at all and can not be a parent (if Lept. should be a hybrid); its loose pubescence is quite peculiar. I had always placed it doubtfully with pilosum, but it certainly looks different.
P. torreyi & clinopodium I have never seen.
P. Tullia — I got on Cesars head a green form with compact heads, not so hairy at teeth etc which may possibly be hybridized — We should have examined those things in loco with more leisure and care; I suppose it is your dubium.
P. incanum West Missouri to Arkansas; a form under that name Hale, Louisiana seems different, approaches pilosum.
P. albescens Texas & Louisiana, is too much like a small-leaved incanum

Here you have a few crude remarks which come post festum, and may therefore be laid aside! I know how disagreeable it is to have new doubts raised after your mind has come to a fixed conclusion. But your frequent allusion to hybridisations shows that you are not all settled yet — but, of course, you do not want to be disturbed.

Nothing new here — a delightful spring, and whenever sudden changes threaten, they pass so mildly — while snow in Rome in March and terrible avalanches in the Alps.

Yours truly

G. Engelmann

Parry sends a few Euphorbias, nothing new.

GEO. ENGELMANN, M. D.
3903 Locust Street.

St. Louis, Mo., April 29 1878

Dear Gray —

I congratulate you on the completion of the first volume of the Synopsis, the last pages of which I rec'd today.

Of course you will charge me with the value of this volume which I hope to get shortly. I expect a few more copies can be sold here.

I send you today a new origin of our flora, Wolffia gladiata, Hegelm. This far only known from the Mexican Lakes (Parry sends it also among Agelle and Lemna) Ravenel collected it last fall in a limestone spring-lake near Gainesville.

Did you get a live Sisyrinchium bicolor — in bloom since 2 or 3 wks, while Bermudiana is not out yet. I hope you will be able to grow both side by side.

You ask me whether I want your Conifers. I believe not, at least not now; I think I am quit of them, and the doubts could hardly be solved by any more specimens e.g. whether albicaulis is a mere form of flexilis (What say you to Hooker who have seen both?) The ponderosa (or another rather) of which Rothrock gets in South Utah for you a curious 5-leaved one — which may as well be a form approaching some Mexican species allied to Monophylla.

Watson must get along with Capossela as he can — I can only take Sibirica, and Juniperus. You seem to think the Sierra occidentalis and that of the Rocky Mountains distinct — is it so? No importance for the Calif. Taxus is the original occidentalis (Oregon) but for your synopsis the matter must be settled.

Yours truly

J. Engelmann

St Louis 7 May 78

Dear Gray

please send a copy of Synopsis to F. Lindheimer, New Braunfels Comale Co Texas and charge me with same.

I enclose 2 flowers of what I take to be Hesperalon just in from the Nueces. Please compare or get Watson to compare with the Original. I have not seen the Wright original but what I described in Watson's Appendix was your multivalved flower, with slender style, slender filaments and small oval anthers. This has stout triangular tapering style, large linear anthers. Is it another species or another heteromorphous form of the same?

So you are with us on the 4th of May; a good work in commemoration of a good day!

I will see ~~Carpe~~ Shaw about copy; he will take one at least.

Am immersed and dulled by coniferous anisotropical study, but have to wade through it.

By the way Mr Hale sent me his publications, but without a word in response to my letter!

I think I saw somewhere that Cosson in Paris was dead — is that so?

I had other things to say that I don't remember at this moment.

My wife joins in my congratulations for the happy 4th of May and many is right often return.

Yours &c

G. Meade

[illegible] and O.C. order per [illegible] 11.

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., 13 May 1878

Dear Gray

Your note on Nuttall's Angelica has roused me to examination of my specimens.

I find to my shame, that Centers has sent it over 30 years ago as P. n. sp. for Georgia? and Commons 12 years ago both forms the (probably less common) major as n. sp. And I have had it all along!

It is the only sp. here — also in Arkansas.

Hayden's Yellowstone and Fendler's N Mex are the only native sp. I have of major and Commons' the only cultivated one from this country in my Herb.

Characters abundant in calyx corolla, etc.

Dr Garber sends what I take to be the true Ligusticum flavicaule — but I have never seen Angelica plant to compare. How to get a single spore bearing leaf of that??

Rev C. [illegible] is it Florida.

Our N. Angelica makes the same spots as major does — fasciation, branching spikes, ~~pollaceous~~ lower bracts and the like.

I just get yours N. C and send Sp. 10. hereby.

That Photograph is grand —
Pity that I am not with you!

Did you not say that I should return it to you?

What are you driving at now? Continue Synopsis at once — or take a respite through some other work?

Yours truly

J. Engelmann

Poor Hagden had to take the back seat! He looks rather morose and gloomy on the picture.

The Fusion of Démonios, you sent, is a subinclusa

Thanks for Bruth. Minos. Brasil.

Did you get Liz. albida in good condition?

Yes I got the Diploma for Lin Lond. — I suppose I owe it to the kindness of Hooker.

You see I see the name of Californiana Lois "not California" I find it quoted every where as California. Why is the date 1813 and not 1825 attached to it?

I repeat that I prefer to retain the name of tuberculata as now well known, but must make it: tuberculata Gordon (non Don)

Picea Colorandensis would be the right name for Engelmanni not the Pseudo Mariesii, as there Millers are found of the first in Colorado, dogeys are seen of the other! This is not characteristic of Colorado though the other (Engelm) extends through, to Oregon

then, jam satis!

Yours Horace

GEO. ENGELMANN, M. D.
3008 Locust Street

It is quite a rarity to get such a long letter from you!

St. Louis, Mo., ... 187

Dear Gray

Thanks for the Photo. You seem to improve in flesh.

Why do you make Abies bracteata "Hook & Arn"? I find nothing of it in Bot Beechey, the first I can find of this name is in Natt. Syst as quoted in "Firs"

P. tuberculata Gordon you have failed to notice.

P. Californica Lois 1813 — Thanks for the trouble you have taken in copying. Carière 1st edit. copies Lois. account so that I was fully acquainted with it.

There is nothing but the Corality, Monterey and the large cone, and leaves in 2's & 3's and large, Pinus like seeds, "which germinated in Paris"

All this makes confusion. Leaves not in twos (may have been so in the seedling plant!). Seeds not larger than common Pine seeds and edible for birds or squirrels only. There must be a confusion with Sabiniana or Coulteri etc. And that seed germinated is entirely unknown. Yes, if there were a specimen in existence of the cultiv.

plant! I must ask Delaisne — It is quite probable that that is the first confusion this Monterey Pine has given rise to; tree of insignis, seeds of Cullen; the other is P. Sabiniana branch of insignis and cone of Montezumae

Yes, Menziesii of Colorado grows on wet bottoms and along streams, and I suppose that is one of the causes which made you confound Douglasii and this one; you mistook Short-leaved Douglasii for the other; As far as I have seen in Colorado (Clear Creek and Manitou) the dense one is along streams only single or in groups while Douglasii grows on the slopes and makes forests.

If I had only Colorado and Oregon specimens, I would not hesitate about the separation — but there are Wyoming specimens (or Pedro) which seem to be intermediate!

Parryi is good and I thought of this name, but English nursery men have given the name of "Parryana" to the white leaved form already! Still I may adopt it

Colorados is good enough, but it extends north of Colorado

I am working up the Strobus bribs just now, and find it very difficult to separate the species — except Lambertiana which is very distinct, and

Among my acquisitions in Europe Rubinia Sofoid: Hecke's Herb — Prag — Given from the Nootka Island, which is probably nothing but the Oregon pervoflora of the opposite Asiatic shores. Forest had named it R. Neoptylla but I believe the name is nowhere published. It would be an acquisition for our flora, if Hecke's localities are reliable.

You say nothing of your coming here in August.

Here is a card today from Webster which pleads hard (without many words) for

M S.

Your Young Friend

Engel

Those Sagittaria bulbs are in my Herb for many years — 30 or 40 — I thought it a well known circumstance!

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., June 15 1875

Dear Gray

Thanks for the fine flowers of Oak — They are evidently the same species, though one has lost last year leaves and has larger and more (5–8) anthers; the other has usually only 4, & smaller ones. The are Q. ellipsoidalis, not agrifolia; Dr W found his species in the very same neighborhood of Auburn, where agrifolia does not penetrate, I believe.

Thank heavens, I have sent the last MSS to Rattbrock and am thus far done with him at least, once more a free man — for a short time.

And what do you intend doing in the vacations? Can you be induced to take St Louis in, and spend the days of the Association meeting with us, i.e. and Mrs Gray? What say you?

Mde. Exploring Shaws Compass the other day I stumbled on an unnamed little thing — which, to my surprise, proved to be Pinus Banksiana! Very characteristic and quite unique. Otherwise

I see nothing but arid botany. But, yes, Mr Letterman, 30 miles SW of this sent me the other day a "Cypripedium" without flower, quite tall. It can not be any thing else but Veratrum Woodii "covering a whole hillside full!" — We will watch it. You will want plants in the fall.

Yours, Truly

J Lagarus

id vocem "dry botany"

Our Plantago looks very different now from the old Herbarium specimens. Must watch it.

Lactuca Scariola, which is very common in rederties since a year or two, promises to be another "Compass plant"

Curiosity is the twist of leaves in the true A. Mexicana and the similar Allosyron. Let Lagarus show you fresh branches.

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., June 21 1878

Dear Gray —

Watson told me you wished me to find a place for the name of Pinus Californica. This induces me to submit to you a few questions in synonymy:

Some Conifers in California were named and described by Don from their cones only, sent by Coulter, in Trans Linn Soc 1837:

Abies bracteata
Pinus radiata
P. tuberculata
P. muricata
P. Coulteri.

A. bracteata had been named the year before by Douglas P. venusta, which thus, if there is a description — But Mag Conif, would have the priority — but bracteata is the adopted name every where — and I have retained it. I want you to say, whether justly so.

P. radiata Don is dated a year later Douglas in Lond. Arb. called insignis, and this last name is every where adopted, and may stand by common consent.

P. tuberculata Don is a form of radiata (~~or~~ insignis) but the tuberculata

Good news so that they are good eatables

Remember me to the Mackenzie
Observe Lorenz on the Mexican
Pines

O yes, L. variabilis has just such tubers! — and all perennial ones make small tubers I believe our old Texan stolonifera also —

T. chinensis makes the largest ones, probably because in long cultivation but though introduced in California & common there, I can not for the life of me get our Calif friends to collect it. a fruiting specimen; the fruit is unknown.

But does Nelumbium tubers now? I thought they were formed towards fall, for winter use (like potatoes) if already formed, they can not be mature, and will probably spoil and not grow, as well as Sagittaria tubers.

of the nurseries and of the present botanists is a very different thing and was first introduced under this name by ~~the Oregon Committee I fo~~ Gordon in Jour. Hort Soc 4. 218, 1849 who describes Hartweg's plant, it was then figured 1853 in Oregon Com. Rep. as we know it now. Dr. Hartweg himself had already named it 1846 in Jour Hort Soc 2. 189 P. California taking it probably for Loiseleur's plant.

And here comes this name, published in Nouveau Duhamel (where? Che Pinea) 1813 for a plant, with "large cones and large seeds" from Monterey – which is most probably our insignis, which, however has no large seeds – The seeds size has indeed seem to look in Coultersi or Sabiniana for "California" a plant seems to have been raised from it in Paris, and lived precariously for many years – without being well described. –

P. muricata is now the same as Don's,

P. Coultersi Don was 3 years later described as macrocarpa by Lindley which name seems to be abandoned.

Pinus Sitchensis Bongard 1833 is the same as P. Mengiesii Dougl 1837

I would propose to adhere to the following names and synonymy:

Abies bracteata Nutt (P. bracteata 1837 P. venusta Dougl 1836

Pinus Sitchensis (Pinus Sitchensis Bongard 1833. P. Mengiesii Dougl 1837

If the Rocky Mt form should be found distinct, it ought not to confirm the name Mengiesii, as leading to confusion – I propose the name of Pinus rivularis for it or scaturiginosa

Pinus insignis Dougl 1838 P. radiata and P. tuberculata Don 1837. P. Californica Loiseleur 1813 ? non Hartw.

P. tuberculata Gordon 1849 Oreg Com Rep 1853 non Don 1837. P. Californica Hartw 1846

P. Coultersi Don 1837 P. macrocarpa Lindley 1840

P. muricata Don 1837 our plant.

These are all the doubtful synonyms which I know of; Let Watson look over the list, and tell me, what you think of it, or what alterations you might propose.

Watson will now soon want his Oaks for R Calif I suppose –

Yours truly

J Engelmann –

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., July 7 1878

Dear Gray

yours of July 1st rec'd.

The enclosed about Gray's Laurocea is all I can give; buds very small.

Enclosed also seed of Pinus insignis; you see that there is nothing like Cembra, there is confusion; it is probable that the writer imagined the seeds large, because the cones are large. There can be little doubt, that the Monterey pine was meant, but the description so obscures it that it can not be made out properly. —

I think it will be better to get your collection of Calif. Conifers; at least that part enclosing ponderosa and allied forms; especially young cones or female aments; I find in my collection a single one, marked Jeffreyi by Boland with a young cone, scales recurved, long pointed, while the proper ponderosa of the Coast of California has scales erect, short pointed. Question whether Gray's deflexa is the same as Jeffreyi, as the name indicates; question also, whether Bolander's plant is really Jeffreyi. I must trouble Hooker about it, to get full sp. of his cult Jeffreyi. — On the anatomy of the leaf of Bolander's plant I find no difference from ponderosa, which itself differs from all other Californian Pine in leaf structure. Bolander's leaves are only 4 inches long, while Jeffreyi is said to

have very long leaves

So you would come, sweating as I do to night I can hardly blame you, but they tell me that Cambridge in summer is about as hot a place as any here about.

Abies bracteata Nuttall Sylva 1849 – Hook Bot M. 1853 therefore Nuttall's earlier. In Bot Beechey it is plainly Pinus bracteata – not even with (Abies) in brackets

To repeat: All our Sagittarias are perennial and propagate by stolons, which at the end swell up to tubers. I got the other day a fresh S. heterophylla with a 4 inch stolon, already swelling at the end. Our only annual species is the abnormal S. Calycina and probably pusilla.

After seeing the seeds of Ph insignis you may make up your mind, whether it would be proper to ignore so much of the fearful description of Lois. and restore the name of Calif – insignis not very proper either, as it is one of the most local species

I send some notes on Utis & Baptisia sulphurea. I have sent specimen of the latter to Canby, to be turned over to you, when he is done with it. –

You never sent me your last batch of "Contributions", with Elatine etc. – Miscarried?

Yours Truly

J. Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., July 17 1876

Dear Gray —

What a wise man you are! "St Louis? — no! — ~~too~~ hot — get sick!" A Prophet!

So it is! We have a fearfully hot term, today the 10th day, thermometer 98½ at my house, in town more — My wife is, without having a sunstroke, completely prostrated — too weak to leave; we take her out every evening after dark — in daytime she is mostly on a couch in so. Drift and ice on the head. We will leave as soon as this hot spell is over, which the Signal People promised for today — But no sign of it yet. Should prefer Colorado but fear the long travel over the hot plains of Kansas. — If you had been here this year (it is a year this day) you and your English friends would have had a better insight into continental climates! We would have said — (as we did then about the cool weather) that "this is an exception." when the general remarked that he always met with "exceptions"

Well, enough of the weather, but that stale topic really becomes important now.

Sunstrokes are more common than we

Yes, please send me your Pin. ponderosa Material, if possible also Torrey's deflexa. Is that at all like Jeffreyi? See his f & i in Bound. Rep. — Or will you send after the hectic term, or after I get back, which may not be in time for the meeting of the Association.

I enclose a photog. of the new form of Hesperoloe from a west Texas Correspondent, as well as pieces of stem and branch — Please return. The anthers are much larger than in your cult. plant — but I suppose this is no specific, still less generic difference, as Watson suggests. Will try to get plants.

I also enclose seed (fruit) of Echinocyst deflexum, which my zealous Indian territory Correspondent found on the Mississippi bluffs in Iowa. Turn it over to Prof. Sargent with my compliments: I put aside for you a specimen as also of Floribundum with large and with small flowers, some specimens quite showy.

I have written to Hooker for gardens of Pinus Jeffreyi with your cones. They must be authentic, having sprung from Jeffrey's seeds.

I enclose two short articles, which you may have seen before.

I hope you are well and did not get caught in the "hot wave", though they say that even Rye Beach is involved.

Remember me to Mrs Gray.

Yours ever

J. Coulter

Gray

GEO. ENGELMANN, M. D.

2003 Locust Street.

St. Louis, Mo., July 25 1878

Bletia aphylla, Missouri, G W Letterman; lip with longitudinal purple lines and folds or ridges; flower 10 lines long.

Bumelia No mention is made in synopsis of stamens being opposite to petals, which is urged in Brimler.

The above was written some time ago. The heat has unnerved my wife and I will have to build her up on the shores of Lake Superior. We leave July 31st. Dont know, whether much botany will come up there — but then, there is always something to see, if the eyes are kept open.

A Mr Douglas of Illinois, nursery man (associated with Sargent and with Meehan) has sent me many seedling Conifers, and I find what I suspended from my Colorado examinations, the cotyledons of Menziesii — Conifers seem to be entire, like exelsa, while Douglas Abies nigra has a smooth, entire leaf. Now I want to see Cotyl. of the perfect Menziesii! If only somebody had it! Can not Sargent be induced to raise it?

Here turns up a new distinction of Abies and Picea in the cotyledons: Abies flat, Picea compressed, keeled — but how is nobilis & magnifica and how Menziesii and Alcoquiana?

I find from a memorandum that A Gray years ago pointed out, now Murray, Carlstrom

and they were wrong in ascribing to the Mexicani Group stomata on the lower side. And indeed it is singular, to conceive oneself. That they are on the upper side! Look at a spray of Phoenicean which Sargent can give you, and you will have to look twice and thrice, times before you are satisfied. Look also at the curious twist of the wood, base of the leaves on the lower side. Murray figures this twist without understanding it.

I write particularly to tell you that, before I leave, I return you Murray, with thanks.

After a number of failures to send living Agelle to Boston and DeBary, I succeeded last fall by picking it in the mud, and watch it grow. A few buds retained life and now DeBary writes that it grows as the most luxuriant weed over tanks, pools, and watering pots.

Did I tell you that Hooper has sent me Pinus Banksiana living with young cones?

George will always forward me letters sent here, but you might write direct to Houghton, Michigan

GEO. ENGELMANN, M. D.

3003 Locust Street.

Bayfield, Wis

St. Louis, Mo., Sept 1 1878

Dear Gray

I ought to quarrel with you, but my good nature won't let me. Why did you not write?

I came to Chicago Aug 1st with my old enemy, that 2½ years of freedom from it had made me almost forget — that rheumatism in my foot. The last thing I could do was to get on the boat and climb in my berth where I 3 days floated on the Upper Lakes, passing the copper mines at Calumet. I visited in slippers cut open, and ventured a little into the woods, where I for the first time saw Virea alba. Rubus Nutkanus in magnificent flower and fruit (I have seed for Sargent) so that I could hardly imagine that it could be the same as that puny Colorado thing.

As soon as I had my wife safely installed here (Bayfield) among trout fishing tourists and Chippewa Indians, I hurried back to St Louis to receive those friends, that braved the heat and the malicious yellow fever scare — dropped in (36 hours from Lake Superior) on the eve of the meeting on a jolly company in my house (then and now George's dominion) as Putnam may tell you, and stayed with them through the week — Meehan also came after he had been satisfied that fever could not

get at home. Few botanists there, Mechan & Martindale, Ward of Washington and Arthur of Iowa. Greene was expected, but failed to come. —

I had a good deal of apprehension about the meeting but it turned out fairly well though less interest was shown by the citizens than in many smaller places. —

I get here a letter from Crepin, who says that my calyptra plant from Colorado (you have specimens from me) with single sporangium is his avis lanis var. Bourgeaui.

I find the same here at Grayfield and may send Sargent a root or two. He writes that he revised your whole Roses.

I have here Strobus, resinosa, a considerable Balsamea in abundance — also alba & nigra. In the localities where I have seen it nigra has very short leaves, small cones and grows in boggy soil while alba I find on rocky hills — but, of course do not know, whether always so. (common anthers.

On the whole the botany is poor; much of it your. I expect to be in St Louis about the middle of the month

Yours Truly

J. Engelmann

Does Goodale know of any investigation of the compression plates (Silph. lac.) and explanation of the twist? I said something in the Assoc. on this & the arrangement of stomata. Galvanic currents and arrangement of cells were suggested. Twisted leaves frequent in Compositae. (Bot. Tel. p. 6. 1884.)

One of my greatest troubles now is, that I shall be unable to fulfill my promise to Mr Watson, but still hope to do the greater part of the work next month; as most of it is already prepared. I shall not write to him till I can be more positive.

Ever yours

G. Engelmann

Mem. about Sol adopt tyo
Wing Ether to Sargent Wing
interest you

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Nov 26 1878

Dear Gray

Thanks for your kind letter received over a week ago. I was getting better then and hoped in a few days to be well and commence work and correspondence. But presuming too much I was thrown back into bed and am now only beginning to spend part of the day on the sofa though I feel otherwise quite well, my heart requires great care. I am afraid there will not be much professional work this winter!

Well, about Coniferae. The last I heard of them was the paper of Eichler in Flora 1877, that we discussed while together in Cambridge. I do not know whether any thing new has turned up since.

The male "ament" has (not to mention Linnaeus) been considered a single flower by Mohl and Braun 30 years ago and ever since — a view, as it appears, adopted by most morphologists. The axis is elongated (mostly) just as it is in the carpels of Myosurus. The scale of the anther (often with an enlarged tip, or peltate) corresponds to the connective, and bears on the Cover side 2 or more anther cells.

This is uniform in the whole order.

The female "flower" offers more difficulties.

Abietineae are, I think, all clear. Two connate scales, turning their back upwards, correspond to the two primary leaf organs (scales) at the base of each male flower or leaf-fascicle in Pinus; which are also turned more backward, though Mohl

and they bear on their back (thereby reminding one of ferns) the two ovules.

This tiny scale and ovules constitute the female flower, on the axil of the bract; and the whole cone is therefore an inflorescence.

But how must Cupressineae ~~th~~ be explained? Some assume suppressed bracts (of which no trace is left, though the mucro on the fruit scale of Thuja & Cupressus is considered by some as such a trace). In this case the inflorescence would be the same as in Abietineae, and the ovules would also be born on the back of the (morphologically inner) scale, and would constitute with this scale the single flower.

But there are many reasons against this, apparently simple and uniform explanation; and, after all, simplicity is not always the way in which nature proceeds. The complete transition of the leaves to the carpellary scales in Juniperus and Cupressus on the same axis scarcely permits the above explanation. In this case the Cupressineae must be considered as having single flowers corresponding to the male flowers, and composed of several (in this case I believe always opposite) carpels.

Another difficulty is the position of the ovules in this order. They are also on the upper side of the scale ~~but~~ as in Abietineae, but not on the real upper side — another striking difference.

Braun and others were inclined to consider the ovules not as product of the carpel, but as axillary buds. This may be so in Cupressineae & is not understood how they could make it in Abietineae. Moreover, Gymnospermae have certainly not axillary ovules, and the fruit-plate of ferns also points to the contrary.

It just now strikes me, that we should separate the Conifers with opposite leaves and ascribe to them single fem. flowers analogous to the male flower, with several ~~opposite~~ alternate pairs (or verticils of 3) of carpels and upper ovules (while the male ~~anther~~ stamen bears the anther on the below!)

The Cupressus cone is then a single flower but mimics the inflorescence of Pinus.

We ought to hesitate less in assuming these two forms, when we consider that there is a third one in Taxus with terminal single ovule.

And why should we not in such a large class, where the struggle for higher developement is so plainly expressed, find different forms? Does it not look as if we were attempting to force unanimity or uniformity into a world of plants that indicates every where that struggle.

Glad that you passed your 68th birthday well and hope the whole winter will be favorable. I shall be 70 in 2 months and hope to be up and about again by that time.

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., Dec 16 1873

Dear Gray

The first sunny morning, and the first that I feel right well, though still confined to the house, I have employed to study more carefully the female flower of Juniperus and am now convinced that the carpels are here simple leaves, and not axillary producing of an (abortive) bract. They bear therefore a close relation to the anther- or pollen-bearing scales, and the whole „ament" is a single flower.

Thus the difference of the Abietineae and Cupressineae would be still more marked than we had it before.

I enclose you some sketches made this morning – which please return at your convenience.

Juniperus Californica is especially interesting, because (just as in the pollen bearing leaf) you can trace the cicatrices and its modification all through the series of carpels from the regular leaf through the sterile and fertile carpels to the innermost small sterile abortive carpel.

According to this view, the Juniper galbule would be a regular berry

Let me know, what view you adopt - so that, if possible, we may not contradict each other.

Best wishes from all of us for you and yours for the holidays and a new year!

Yours ever,

G. Engelmann

The enclosure for Edison was written some days ago - as part of it is for you, you may as well read it first.

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., Dec 27 1876

Dear Gray

Notwithstanding your good wishes we had a sad Christmas or none at all. The day after I wrote, George — wounded himself in a post mortem examination with of a puerperal peritonitis case, and has been very sick ever since — only today I can say that the danger is — — passed.

I was of course — unable to do any thing else during those 10 days, and am pretty much worn out — now. But things will come right again, I hope, in a few days, and then we will talk Conifers again. — What else would you want of Sketches of Jap. Veg.? I can send you all the former ones, I have made, of male flowers, leaves etc, and let you select whatever you may have use for.

I have never looked at Cupressus — deferred it till I was done with the others, but your cone is note worthy. A form of Cupressus fastigiata has still stronger knobs. Their evolution, early stages, and of possible monstrosities would be [illegible].

The scale in Taxodium is distinct enough, more so in the allied Sequoia, and remarkably so (palmate!) in Cryptomeria, very distinct in Cunninghamia, though all these evidently belong together.

Tell Mr Wilson, that these 4 weeks of grace or respite are more than I dared to expect — and that, deo volente, I shall be on hands.

I had a good long letter from Hooker thanks to you probably; he must be terribly overrun with work, so that it seems almost a sin to crowd more on him. Hooker speaks of coming over again and of the possibility to make a trip eastward together — but I suppose that is more a fancy or desire, or perhaps a wish, than a settled purpose.

Yours ever

J. Engelmann

I have been once only out of the house; must be very careful; the trouble with my eye set me back some.

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., Jan 14 1879

Dear Ging

Thanks for your kind letter of Jan 5th. With us times have been hard since, and this is the reason that I have done nothing for Watson. Though George was thought out of danger after the first week, he continued to suffer terribly and, gangrene taking place, has lost one finger of the left hand, part of the tendons of it in the palm of the hand — several deep seated abscesses formed and had to be opened — in fact he has not been and is not now a whole day free of pain, and can only sleep under the influence of narcotics. That threatens a long and tedious recovery. He is not yet able to be out of bed.

I have been in my clothes as long as I could stand it — just getting well myself — sleeping on a lounge by him and up for hours every night. At last we engaged a young physician, a friend of George, to devote himself entirely to him, and he is since a week in our house — I have rallied since but my time is so dreadfully cut up — and not the least by friends who make sympathizing calls and steal the time which belongs to Watson!

Of course we feel relieved as to any danger, but still have to do devote

ourselves to George almost entirely, still some professional business keeps us also lively. When can that the Cairnes and the Caimus come to work up the Rivers? I have even failed as yet to answer two fine letters of Hooker's, though I long to do it.

Your big bundle has come some days ago, even before your letter, but has been opened only today. Thanks for the good things in it for poor Carter's; bundle will not be opened for some time.

Our lowest was — 15.5, but it had no bad effect on my rheumatic affection.

I hope your and Mrs Gray's colds, influenza and the like have disappeared, if that dreadful Washington Climate (or is it more the climate of the Capitol?) has not brought on a relapse. Take care of yourself! We appreciate health principally in its absence! "Cogito Tard"

Watson sent a fragment of Orbis the other day, of which I can not tell whether Megarhiza or nobilis — but certainly one of them, but Sargent's "nobilis" seedling is hardly that but probably grandis.

Show Watson this letter — I could only repeat what I have said above, in writing to him!

More and better news soon, I hope

Ever yours

J. D. Hooker

Chelsea, 10th or 11th Feb. Thank you for Asa Gray's Cambridge Copy.

GEO. ENGELMANN, M. D.
3993 Locust Street.

St. Louis, Mo., Febr 5 1879

My dear Gray

You have not heard from me for some time — and how o how did that time pass with us! A week between hope and fear and a week now, that my dear wife, my Georgie's mother passed from us.

I can not realize it yet, it seems impossible! Grown up together — united, as it were, since 60 years, united, in union, as two human beings can be, and now separated — o how lonely my way henceforth will be — but not lonely — if the vivid recollection of — half a century's united life can illuminate that way. My destiny is dark — but in the past I live

My own sickness tried that self sacrificing self forgetting being, too hard but the severe, dangerous sickness

of her son broke [illegible]. When he was out of danger, she sank.

She was taken sick Jan 19 seemed to be getting better after a few days, and then sank rapidly. She was never unconscious, until the last hours, but still not clear, rather clouded, and did not speak much though she recognized everyone, and gratefully acknowledged all we could do for her.

Tell our friends in Cambridge of my bereavement — dear Mrs Gray will feel for us and with us — as you all will, I know.

Good bye

Yours ever
(as long as I live!)

J Eaglesfield

a northern passage, along the 46°–49° while Colorado reaches the California Mountains through the ranges of ~~South~~ central & north Arizona. So Colorado both meet but occupy different altitudes; in southwest Colorado and S. E. Utah they are said to be (?) mixed.—

I had given to Hooker my views of our Pines, Spruces — which are more different than the firs, and which he may not adopt.

What a capital paper that of Olenthaw's is, on Euphorbiaceae full of strong common sense clearly expressed; it does one good to read it.

Thank Mrs Gray for her kind and appreciative letter. It did me good to read it, especially after all the well meant but empty words received — many others, I had only a or two more of similar character, and yet a more pleasure — in finding in them a similar appreciation of the dear dead one.

George is improving but his head is by no means well yet; though he is getting stronger every day, does not eat.

Yours ever

G. Engelmann

I will write to Gray soon

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Febr 17 1879

My dear Gray—

Your letter and Hooker's touch the tender point and may stir me up. I will ~~at~~ or at least Hooker notes.

I know, of course that Watson feels impatient, but he is generous enough not to say so. Whitney anger I can not help and I almost felt like saying to him, to go on and not count on me any more — consider me dead.

I tried to work a little, but feel an absolute prostration of my faculties — can not collect my thoughts. Hope they will come back to me! But when?

Hookers letter has rather astonished me. He ignores my letters to him and my pay for paper, the results, I have arrived at I have reached by years of study (even at Cambridge, Dropmore and Newton years ago), and patient research and I can not see that I would have to change a single item in the arrangement — and in the

definition and limitation of species.

In what way have Hooker's "eyes been opened considerably" by recent investigations? — unless it is the clear distinction of A. Magnifica and nobilis. They are the same character given by me, only not urged to positively. Pg. 99 you find under nobilis: "leaves of young trees and lower branches of old trees are longer flat and grooved" the same is repeated on the following; concluding page. But old fertile trees have leaves keeled above and below flat-quadrangular. The best of the few specimens (native) at my command is Drewer's from Shasta, which you must also have.

Others, named nobilis by Low and Lobb in HK Kew are clearly magnifica; section

Why he calls No 1 amabilis is not clear to me, unless, as I have stated, and as already Lowdon states, 2 forms are constantly confounded — Engl as amabilis and grandis. But he comes to the same conclusion indirectly as I do that that coast plant is a distinct species — which I think is grandis Dougl and which he calls amabilis (& Hort Dropmore) and my amabilis is a densely leaved form of it.

‡ 2. Hooker's "grandis, lasiocarpa, Lowiana" seems to me a confusion, and he quotes no specimens other than that original "lasiocarpa" Hook which McNab and myself suppose to belong to subalpina.

3. Lowiana is the common fir of the Sierras and which I still must take for the Californian form of concolor. I found in Colorado just such long-straight-thin-leaved specimens as the common garden Lowiana and have traced the species through Arizona, to Nevada, San Bernardino and to the Sierras. I think it does not only not grow "north of Oregon" but probably scarcely north of California (and I agree with Hooker that Douglas probably "never saw it")

4 & 5, nobilis and magnifica I have spoken of above; glad that H has come to the conclusion that they are distinct.

A. concolor of Hooker is the Rocky Mtn form, his Lowiana the Sierra form of the same species. Or — what are the differences? What you got at Manitou must be concolor as subalpina does not grow so far down the mountains.

A. subalpina is as you suspect a long way nearest to balsamea of any western fir, in fact the only one allied to it. Murray's bifolia is the same; Hall gathered it on Mt Hood & its. It grows from the Colorado Mtn through Montana & to Oregon ✱ Lyall East side of Cascades (of which I have a fragment from you) is the same, also others from Lyall.

I see that I only repeat what I printed a year ago.

Hooker, I see, puts the same Picea forward.

‡ There is no other "Valley or River-Flats" seeing the same No 1

✱ It is of interest to see how the northern form (subalpina) reaches the Oregon Mountains through

Gray

GEO. ENGELMANN, M. D.

3003 Locust Street.

St. Louis, Mo., ... 187

Clapp, Med. Bot. U. S. 1852 p. 195: roots used as food by the Indians. So, you see, the use of Lagittaria roots or bulbs was well known, even to our predecessors, the red men.

I just get Regel's Roses. His criticism of Asmus with a number of old world sparks shows little critical acumen, but his making our Asiatic a form of moschata is too bad.

In your article in Am. Nat. for May you touch him or it very lightly, but it was probably wise to treat such gross ignorance or perversion, which is imposed on the public as scientific light, as mildly as you do. Our botanical journals also often require a hint or something more serious than a mere hint, even if if one should get the name of a self-assumed dictatorship; who cares? The question is one of policy: how can most good be done?

April 22

Dear Gray

I have today sent a box containing specimens, which I had accumulated for you; two years old Cassava, which I had been for years in my hand. I just ...

ber of Calif. Pines received from Oslander 12–15 years ago. He used to wrap them up in paper and send them through the Smithsonian I believe — 2–3 months on the way. That accounts for the poor condition they are in. They were just made and sent to study them, not for Herbarium purposes.

I am getting well, but have to keep my limb bandaged yet, can not walk far (crippled for life?). George is also recovering would need, is gone today in the country for a few days to get country air, and expects to meet the Am. Med Assoc'n in Atlanta in two weeks. We have talked of going to Europe for the season, but do not know yet

Nothing particular botanically.

Yours truly

J. Engelmann

I suppose you have to divide with Sargent, or you keep for the Herbarium the pines & cones, such as they are; I believe that is your

Picendia (Microrala) quadrangularis, Gris. heretofore only known from the coasts of Peru and Chili, has long since been collected in the ~~low countries of~~ coast region of California by Dr Bigelow and afterwards by H Bolander and lately also by Mr Greene. — It is a small annual 1 or 2 inches high, single or branching from the base with long and slender one-flowered quadrangular peduncles, a ventricose 4-toothed calyx, and saffron coloured flowers; + large semi-circular stigmas borne on a slender persistent style.

+ stamens inserted in the throat of the persistent corolla;

Corrections for Flor. North Am.

p. 223 C. odontolepis, last line — of C. corymbosa by its acute lobes of calyx and corolla

(C. corymbosa has also circumscissile capsule!)

p. 397 — P. pusilla Nutt — gen. 1. 100 (not 110)

All these 3 species (Brig. pus. & litoralis) have scobiculate seeds

389 P. nasejor not here at all, and probably not southward. In northern Illinois I find both in lawns and yards — also at Cambridge

On Lake Superior and in the Rocky Mtns and west, only P. nasejor.

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., June 27 1879

My dear Gray —

This paper, begun 6 weeks ago, shows how long I have been silent. And your kind letter is a week in my hands. I have to thank you yet for the admirable text book. I was much pleased with it — about Oaks difference, about Conifers we can verbally arrange.

A letter from the "Cloudland"! Perhaps it would have done me good to be there with you — better not! Well, I worked a little, did Quercus — but before getting well into Conifers was taken sick again and this is the first day on which I can do something. I fear that intermittent is only a form of some other deep seated complaint, "in prostrated are much".

Now for your invitation and my plan. It was rather forward in George to invite for you also to me — without asking, whether it would! I accept your kindness, of course, but will not come now, nor will work there i.e. not write on Conifers for N Calif. That must be done here, where my specimens and

The roots send home for N Carolina to you. ag
you will flowers this spring a regular Iris cristata
but [illegible] purple blue! The only 1/2 [illegible] inches long;
outer lobes crested and spotted; Iris cristata var.
from near Cesars Head. Iris verna. Did not live

Rosa arvensis which I sent you from Cloud
is now in bloom (May 8th) when no other Roses bloom
except the first yellow roses, which just now begin

copious notes, sketches etc, can be utilized.
I could not carry every thing there; will and
must do it here, if I can; must try!
[illegible] is [illegible] seen such a day rather
but when before me it is a mountain!!
My plan is to finish [illegible] then [illegible]
that may be, to join George east, [illegible]
must go alone and ahead.
When nothing but pressing is need
I should feel much easier.
I have got [illegible] than right about Phoenix
jimp, and will have him right about Nitrostoba.
Hooker says you agree with him that there are only
2 species in the Sierras and none of them with pale
bark! What say you? I want his [illegible]
[illegible] and from a [illegible] sermon, [illegible]
from the Rocky Mountain form, he [illegible]
What do you say to the pith-character of Vilia
I have had an opportunity to examine Gott's
Catalogue (living and must take Wardens C.
[illegible] for a good species. Stupid that I did not
see it long ago — as I always noticed the earliest
[illegible] (tegmen) in [illegible] Remember me to
[illegible] Gray — [illegible] kind
Yours ever
J. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., July 18 1879

Dear Gray

Thanks for your kind letter of 16th but we have cooler weather, & begin to recuperate though coughing fearfully yet — and (stubborn as age is getting, you know) I want to have those Conifers off my hands before I go frolicking, — if I can! We will see, whether renewed spells of hot weather will break me down — then I cannot go, seeing with this cough I can not travel at all!

I return you hereby Bentham's letter. You have seen what he says about male flowers of Conifers.

I had another one from him soon after yours in which he handsomely acknowledged his errors in Juncus, etc, "you have saved me from much those blunders, arising from overlooking what has been published, which I have been blaming so much in others"

Well, our young couple were married day before yesterday (and the railroad trip there with heat dust and smoke

made me a good deal worse for the time, but that is past now. They have written from Cincinnati to day and will reach Cambridge in good time (in about 2 weeks ?)

No, I hope that the California Corp. will not be the "end-all" but it must be the end, before I can feel free and comfortable and begin other work with fresh zest — they must be out of my way!

Remember me most kindly to Mrs Gray and tell her that I am very good, and not naughty at all, and perhaps a little self willed.

Adieu!

Yours truly

J. Engelmann

My other messrs Dunn say hard, I find Steilman is with the Card from Mr. Gray.

Adieu

Cambridge Aug 1879

Celakovsky in Flora 11 June 1879

Notes about the Gymnosperm of Conifers.

I had in 1874 written in this Journal an article opposing Gymnosperms, but have satisfied myself now of the correctness of that doctrine.

In a proliferous cone of Picea excelsa I found the abnormal developement much farther advanced than in Stengel's specimen 1876

In all buds on the upper part of the elongated axis the separated carpellary leaves were recognized as lateral prophylla of a hard, horny texture. All the transition forms prove that these carpellary leaves are connate (in the normal state) with their posterior edges (= Stengel, contra Caspary). The carpel scale turns its (morphological) upper side towards the bract, the lower side towards the axis [this was long known, Mohl & Braun] and that thus the ovules are on the lower morphologically side of the carpel]

The dorsal position of the ovule proves that it can not be an axillary production, and thus one of the main steps of those, who declare the ovule a flower, falls to the ground, and the marginal ovula of Cycadeae are also real ovules (not flowers)

It must also be remarked that in retrograde metamorphosis the ovules of Conifers never become proliferous branchlets, but begin to disappear. If flowers, they would sometimes at least become foliaceous branchlets: The conifer ovules are therefore

emersions from the dorsal side of the leaf, analogous to the indusia and sori of ferns; the indusium of Hymenophyllum is especially analogous, but is marginal; more dorsal in Davallia, exactly Gleichenia and also cup-shaped; Cibotium and Balantium have two lateral dorsal indusia on the lobes

As the gymnosperm of Abietineae is thus proved, the rest of the conifers follows of course. ~~But~~ A Braun has also studied proliferation of ~~Cryptomeria~~ Taxodineae, where in the place of the carpel-scale buds appeared. Thus the foretooth in Cryptomeria represent an equal number of carpel-scales.

Even in Abietineae the scale is ~~principally~~ for the greater part developed after the formation of the ovules, though these originate from it. In Cupressus this scale is developed ~~a year~~ even as late as the following spring. This was undoubtedly the principal reason for the assumption of a disc.

I have come to the firm conviction that 1, an ovule can only be developed as depending on a carpel and 2, that the nucleus represents the macrosporangium of vascular cryptogams. These conclusions are confirmed by a great many observations in all classes of plants and are also the logical consequence of the descendence theory, and must be true if the doctrine of the genetic connection of the vegetable world is true.

Warming has also lately acknowledged my second thesis.

Van Tieghem and Strasburger have proved that the connate scale of Cupressineae, Taxodineae etc can not be separated, morphologically, from the free scale of Abietineae and Braun has confirmed it by the study of proliferous cones.

The history of the evolution misleads, especially in melamorphosed organs.

A late development of carpels, much later than the development of their ovules has been also observed in some Angiosperms, e.g. Casuarina, where first 4 naked ovules appear.

The explanation of the structure of Taxaceae (Taxineae and Podocarpineae) offers greater difficulties. What is the homology Aril, or cupula?

It makes its appearance where no trace of carpellary scale is noticeable and most probably is an altered, late-developed scale itself. In Dacrydium the cupula is oblique, which makes no difference. Cephalotaxus has ~~no scale~~ and no cupula but seems to correspond with Cupressineae, and shows at the posterior of the first a small flattened rudiment between both

ovules, which is most probably the rudimentary carpel scale

Ginkgo offers the greatest difficulty

It seems probable that the 2-seeded peduncle represents the 2-seeded scale of Abietineae; the peduncle itself is the prolonged base of the carpellary scale

The cupula may be a closed circular carpel or a compound one or of several carpel scales

The apparently terminal ovule of Taxus & Torreya would after all be axillary to one of the upper most pair of scales — In this case, however the ovule would originate not from the dorsal, but from the ventral side of the scale. I can not concede that the ovule can be without a carpellary organ — from a morphological and phylogenetic standpoint.

We would then have Araucarieae with dorsal and Taxaceae with ventral ovule — which is not impossible (both Braun and Mohl have seen monstrosities where they suppose discovered ovule like organs also on the ventral side of the adult carpel scale

In Mohl's case a leaf organ was partly carpel and partly anther In androgynous inflorescence (monstrosities)

Braun has seen sori on the upper side of fern leaves.

Result: The gymnospermism of Coniferae is sufficiently proved, but the nature of the cupula of Taxaceae is to be explained yet on one or the other ways indicated above

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., August 2 1879

Dear Gray,

Yours of July 30 has just come, when I expected a letter from George — well, you say, they are well and happy and are enjoying themselves — so I must be contented.

Since 4 or 5 days I begin to feel better I may almost say well, and am bringing up Watsons work to a point, that I need only write it out — full notes, sketches etc.

I am now settling up my affairs here and preparing to leave, which will probably take me the greater part of next week — then I propose to embark on a Mississippi steamer and pay a visit to Dr Parry in Davenport.

It will then depend on circumstances, whether I shall go across to Cambridge at once, by rail and risk smoke, dust and bronchial trouble, or take the Lake route

A letter from you would reach me in Davenport care of Dr Parry

if written at once.

I shall keep you informed of my doings.

I may send my trunk ahead, will see

So you see, there is a possibility if not a probability of my leaving Atlanta in a moderately reasonable time!

Yours ever

G. Engelmann

I forgot to ask Watson for a couple of dozen copies of extras of the California Oak, will you do it for me?

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Narragansett Pier
~~St. Louis, Mo.,~~ ..... Sept 1 ... 1879

My dear Gray

I arrived here safely as per schedule at 3 p. M. Found the young people in good health and enjoying themselves. I have explored a little the botany was struck with the abundance of Labrusca and no other grape — also with the beauty of Clethra alnifolia, but I was interested most of all to find Rosa lucida as white as dark green and shining as needbe, and certainly very different looking from our western plant, which then, probably must be Rosa parviflora, with pale dull green leaves. The Iris between the rocks is probably I. virginica with remarkably sharp angled capsules and with small reddish seeds. Saved a specimen for you, as you have probably the flower, but perhaps not the ripe point which is always my

opinion to get in my autumnal travels!

My son and daughter desire to be remembered to Mrs Gray and you.

Weather delightful, most too warm. Sunday was a perfect day!

We intend to leave tomorrow, so Wednesday from New York, and be Monday in Philadelphia — they going to the Jersey Coast —

It is very pleasant here now, the majority of the crowd having left. Our hotel, however, is to be closed next Saturday.

Ever yours

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Oct. 3 1879

My dear Gray —

Here I am once more — happy and sad, at the old home; where I found every thing in perfect order... We had two very hot days yesterday more so, than the day I left Boston, and the cars were full, among the passengers a friend of yours with his family so that I had a very pleasant time. Mrs Gray's provisions came very appropriate, but were almost too abundant.

To show you that those things can not be too nicely calculated; I happened to get the sunny side in Boston — but yesterday morning in Buffalo the train was reversed and during the whole hot day was in the shade. In the night a thunderstorm came up, laid the dust, cooled and brought back some of my old vigor (I hope only temporarily) but did not cool the atmosphere, so I was out town today in a summer coat, Octob 3d. It had been over 90° yesterday.

And I had very interesting reading in the cars, a good deal more fascinating

I should like to see the nature reports of the Boston meeting.

than a week could have been. You would hardly guess that it was the Catalogue of the Art Museum! I am quite sorry that I did not devote two days to it (i.e. the museum) instead of the two hours allotted to it. The sight of the casts had brought back to my mind the Museums of Italy, of Munich etc, where with her I had studied and admired the originals, and the sensible and interesting accounts in the Catalogue revived many happy moments of past times.

As you see by the enclosed, I have seen Gen'l Schurz and sent the result of my "interview" to Lieut. McCaskey, through you, as I do not know where to address him. If he is able to get from King such a letter to Schurz, he will, I have no doubt, get the appointment. Please mail it to him at once.

I found my plants, even the fresh asters in perfect order, and put them again in press; in short, I have done a good deal to day, though I came home only at 9 P.M., but feel well and strong. Remember me to Mrs Gray and the friends in your house

Yours ever

G. Engelmann

W. Wilson's and copies of my letters to Hooker, Buckley and Martens

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., October 8 1879

Dear Gray

you will have received my letter, written immediately after my arrival home. I then went to see Emily's parents and spent a hot day there (91° vintage) partly looking into the sp. of Vitis. The harvest was over, and all of the wild grapes had fallen except cordifolia "winter grape", which again proved its strong foxy taste. I could never learn whether the eastern or southeastern form has the same taste. In the Mississippi valley it is so distinct that wine made from it can not be used, and even brandy made from such wine had the disagreable flavor.

But I wanted to write you about Buckham's letter, which I found here, on my return. I send it back with this, and I enclose also a bit of Juniperus occidentalis from Colorado, which I collected 5 years ago near Canon City, with expert or uncovered ovules, which please enclose to Mr Buckham, when you write him next.

I have ~~with~~ read the letter attentively. It treats 1, of the proper appellation for the ovule bearing organ, 2, of the arrangement of the tribes of Conifers 3, of the seed (or fruit) of Juniperus.

I suppose you have answered the first — in question, and I could not say much, which you will

seeded pines, that is Pinus, Juniperus, Abies. — I should be very sorry if Mr B. would feel obliged to tear Juniperus out of all connection and analogy* with all other Conifers; sorry, because he would commit an error, and I wish to see as few errors as possible in such an important work as the Genera.

2, the arrangement of the tribes I leave to you to discuss; but to the mere external aspect the Abietineae are one tribe, the Cupressineae with opposite leaves another, and the Taxodineae with spirally arranged leaves a third. All these are distinct from Taxineae with their peculiar arrangement. — But I have nothing to say about these points.

I hope you have sent to Mr Buckham and Hooker copies of the sheets of Flora Californiae containing Conifers. I have there given the generic characters as full as I know now, and though I do not pretend to convince those masters, I may tell them how I have seen it and why.

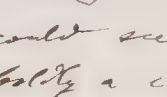
Mr Meehan has sent me a curious monstrosity of Abies balsamea, which he got from Canada. The cone is abortive, half size, sole small seeds abortive and bract a stout subulate expert leaf. That tree ought to exhibit other and farther going monstrosities, if well examined. I shall send you a cone.

But now enough!

yours ever

G. Engelmann

*) another problem is whether the outer coat of all Conifers seeds is not only the ovule, which would be the thin inner coat is not the real testa (and not the remnant of the nucellus). I think so. Taxus!

not have anticipated. I would only suggest that lamina is pretty much a synonym of scale, and ovule-bearing lamina and scale-bearing scale are about the same thing; besides, the same objection may be made to lamina, since it is a circular rim (~~or lobe~~ lapel) or even a lateral swelling (Cupressus). In neither case it is really a lamina. We are justified, I think, if not forced, to compare that organ to a carpel, as it bears ovules, and Bentham and we all agree that there are two distinct or indistinct (even implied) parts, the bract and the (separate or adnate) ovule bearing organ. Why this is not a carpel, an open carpel, I can not see, unless Mr Bentham assumes that some thing else may bear ovules. Is it not the reduced leaf in Cycads which bears ovules? and where is the plant which produces ovules in any other place? No, the difficulty seems to me to be rather in the explanation of the apparently axillary character of this „Carpel" which is against all precedent. But Mohl* and A. Braun* discovered that this organ in Abietineae, where it is most distinct, ~~being~~ (a discovery being fully confirmed by Van Tieghem and other anatomists and the apparently single leaf of Sciadopitys in the axil of a bract in reality a reversed double leaf) is really a double leaf = 2 lateral leaves on an undeveloped axis, connate with their upper edges and turning their upper side towards the axis, the lowers towards the supporting bract. I might add that the two first lateral leaves of each stunted axis in Pinus (at the base of the leafbundles or at the base of the male flowers are also turned towards the axis, and from the bract, thus  (they are always keeled.)

I should be very glad if Mr Bentham could see as we do — and declare this organ boldly a carpellary scale. But if he can not, he does not commit an <u>error</u> in giving it a non-committal name.

But a real error it is in my eyes, if he separates 3, the Juniperus seed from all other Coniferous seeds, and makes it a sort of achen or nucrem. To show him that the same seed may develope without being enveloped in the fleshy bract and borrowing from it its outer coating, I send a fragment of Juniperus occidentalis with partly naked seeds. The same I have seen in J. Mexicanus and I believe J. tetragona — and it is also mentioned in Schieder (or Schlechtendal?) original description. Exactly the same hard bony seed without the aid of the scale!

Then, there is the female flower in Sciadopitys, which he has found different from mine. I have studied it in several species, especially in California because that is one of the largest accessible to me, and I find the scales wide open — horizontally spreading when in flower, and the ovules plainly visible. The seed bears the same relation to that of Cupressus (in form) as that of Biota to ~~Thuja~~, those hard and wingless, the latter with a thinner shell and slightly winged. As I have said before the seed (embryo and albumen covered with a thin coating which anatomists tell us is the remnant of the nucleus which is almost obliterated) is loose within this outer coat — the testa — loose in <u>all</u> Coniferae, attached only at the base, the Chalaza. The testa (resulting from the single ovular coat) is membranaceous in Picea, coriaceous and glandular in Abies, ligneous in the larger seeded, crustaceous in the smaller

Don't forget the Cladrastis seeds for me.
Do you want Dymondia seed?

GEO. ENGELMANN, M. D.
3003 Locust Street.

I have your Elephantopus under, from Ravenel, Aiken.
Put one from Gregg, under Lonicera is E. Carolinica.

St. Louis, Mo., Oct 12 1879

Dear Gray

We jumped too hastily at the conclusion that there could be only one pendulous thing esp there, and yours and Brewers must be the same. Yours or Sissons is clearly Douglasii, as every leaf of the shoot will testify, and Brewers is a Picea! That's what it is! The only harm done is the locality given in Flor. Calif which refers to yours and not to Brewers. Now let Sissons and botanists generally look for "Picea pendula" "on volcanic cone near Mt Shasta" No thing Brewer

Question, whether this "pendulosity" is an endemic habit of Conifers there? Sissons Branches "10 feet long" seem to be simple though many (12-15? 5 or 6?) years old, my sp. of Brewers is branched. Do Sissons come from a diseased tree, forsooth? A mere whim!

I return his letter.

Letterman brought some good things from Utah, among them Polygonella ericoides from the Dr. of the Colorado, and a (to me) new Vernonia, allied to Fasciculata but glabrous, which I want to name after him, V. Lettermani. I enclose a page of it and will send a full specimen. Meanwhile if you find none, I will gather it for you. Heads gets fruitlike & rather [illegible] but I hope [illegible]

Catalpa Kaempferi seeds don't seem to be fully ripe.

C. speciosa was larger, thicker much more winged pods than Bignonioides - not ripe yet - will get plenty of seed.

The seed of Sequoia are pendulous from the middle of the [illegible]

The dilated part in the pappus scales of Elephantopus Carolinianus seems variable, I notice, shorter, but usually elongated. Compare Gray's fragment.

I have fresh seeds of Crinkley's V. noveboracensis. It may be after all a good species. Bebb and Lindheimer also got it, as you will see in your herbarium. I have had them in my hands 2 weeks ago — I suppose you do not care for the seeds — but I will send some to Sargent.

Egg gets such orders from France for Grape seed that he can not fill them all — 140 pounds! The orders come too late; at least for riparia, which is most in demand. We ought to try and imitate the French and Graff vinifera on our stock; perhaps we can then raise them also in our phylloxerated soil.

Thanks to Mr Watson for the Aspidistra all right. — I send copies to Brother Brewer etc. I must also write a note to Parsons which I will enclose for your use and addition. I expect you have sent him my letter to you.

I expect George and wife home this week.

Weather hot and sultry since 2 weeks continuously & thunderstorms have brought no change. Today we have another one, but just as damp and close as ever!

I hope you are all well and active. I feel better even than I did in Cambridge.

Yours, ever G. Engelmann

question for a grammarian: is "had" as correct as "had had"?

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Oct. 23 1879

Dear Gray

Thanks to Mrs Gray for the nice silver things, she had made for me. Enclosed the moneyorder for $45. which I hope will be all right.

The things came a week ago without any letter or bill, and I was waiting for that. All right now.

My young folks came home a few days ago after spending the last week of the hot spell in the Mountains on the Baltimore and Ohio Railroad. All well.

After a little preliminary business ~~I~~ we will now soon proceede to the operation of that stump.

Thus you see I am by no means settled down yet – I have very few patients to see, and indeed our physicians tell me that nobody is sick, I do here and there a little botanical work, but nothing serious, dont feel like being settled down yet.

I got from St Petersburg an original Sitka specimen of Picea Sitchensis – entirely agreeing with all others, but with smaller cones,

I suppose you had no time to look at my fragment of Vernonia.

There seems to be a lull now in Compositae discussion. I hope Bentham will give up his Juniper notion; and the erect ovules in Sequoia ought to make up with him for the reversed seeds.

The hot weather lasted here just 20 days, unprecedented; it is now more seasonable, but no frost yet. The trees do not turn much, except Sassafras and Hickories, the Oaks are green yet.

Yours truly

G Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Oct 30 1879

Dear Gray

Yours of 26th rec'd. I shall send Vernonia Lettermani as soon as I get a few more specimens from L. which you may send to Kew etc. He is a Pennsylvanian, no doubt of German origin, but has dropped the second n.

I find among Jarbert's oaks one which may be also in your herbarium, but I did not notice it at the time, a month ago, when I looked them over. It was sent as Q. virens and may have been laid aside as a useless duplicate!

It is distinguished from virens by the almost glabrous under side of the leaves, but principally by the very knobby nearly hemispherical (not smooth and turbinate) cup, and by the distinct (not connate) cotyledons of the short obtuse, (not elongated pointed) acorn. The specimen does not show whether really evergreen, as it was collected in November. I propose to name it Q. pseudovirens if the word is permissible.

I enclose flowers and young fruit of Sequoia sempervirens.

Also one fruit of a palm which I spoke about to Mr Watson, and of which he did not seem to know anything. You see that it is much larger and different from the filifera. I had a number from San Diego, which I had

mostly given away to Shaw and another gardener, retained very few, of which I send this one. At Shaw's they germinated but died soon; I don't know what has become of the others; must ascertain. It may be a second species of the new genus Washingtonia. The exact locality I don't know.

We had George stump amputated last week — at first doing well, then fever and suppuration; he is in bed but now more comfortable; hope that it will not be a long affair. It seems that the tissues were not in a sufficiently healthy condition.

Was yesterday in the woods. A splendid afternoon and evening, full moon rising as I returned. Woods gorgeous now! Two weeks ago I had given up all hope for autumnal colours; the hickories were withering and the other trees simply green. And they are yet covered with foliage mostly; all the oaks of the low grounds (rubrum, macrocarpa, bicolor) not changing, but the hills splendid — the chestnut rich purple, stellata red and green mixed, tinctoria pure golden yellow, or verging to orange or to Bronze, nigra red (no coccinea here). Sassafras and sumach which were coloured some weeks ago have now lost their foliage. Weather continues splendid, no frost yet in town.

Yours truly
G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Dec 4 1879

My dear Mr Watson

I suppose you are extremely busy fitting up the Fl. California and hope that you will soon be through with it.

In any part of it I find (p. 95 G. Wheelerii) that the synonym of Pinus jeffreyi Murr is recent geogr. Mem. Calif. was been left out. I think however we did it purposely.

p. 120 P. Douglasii a var. pendula ought to be introduced (with the locality given for Pines Pitchers's pendula); branches, at least the lower ones, very slender and long, dependent, up to 8–10 feet long.

p. 121 l. 9 from below, var. persistent base has in addition to, or called rhombic, which it is not the base itself, but the articulated surface, which is rhombic

p. 126 l. 20 [illegible] not [illegible]

— l. 21 prickles, not bristles

p. 127 l. 20 flowers, not anents

That is all, which I can see at present.

I hope you are all well, and your [illegible] also. Have you moved in your new laboratory? [illegible]

Yours truly
Geo. Engelmann

Engelmann
[illegible]
[illegible]

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan. 14 1880

Dear Gray,

I do not know whether you ignore Delpino or do not know all his publications, but I thought it best to drop you a line about some Compositae which I find in a pamphlet (reprint I suppose from some journal not stated) Studi sopra un — ligneggio anemofilo delle Composte. 1871 — which I find among a lot of pamphlets which he has sent me lately.

Hemiambrosia Delpino is ~~Ambro~~ Franseria pumila Nutt
~~Hemi~~ Xanthidium Delpino is Franseria Martima
~~Xanthidium~~ Franseria tenuifolia
~~X~~ — — — — D. color

Ligneggio means I suppose a kind of descent (of anemophilous Compositae)

I send some pods of ~~Dipse~~ Catalpa speciosa and 2 copies of the Gazette with my account of it.

I also ~~from~~ the Gazette, that Dr Gattinger (not 2) sends you specimens; Thus, I suppose, you have his Solidago. He sends me one which deserves the name of petiolaris more than any other. Did you get it and what do you make of it?

(Perhaps I can not say much

It must be two months or more that I last heard from you, and neither you nor Mrs Gray were quite well then. But as I had letters from Watson and received from Sargent I can say nothing bad. I suppose all is right again, and you have commenced the year in good health and good spirits and with good work.

I cannot say the same of me. You may have heard of my accident (broken down with a ladder) which laid me up for 2 weeks, and the bad effects on my knee I cannot get over. It is too stupid!

I am not doing much medical practice and not much botanical work.

The young people send their kindest regards to you and Mrs Gray and their best wishes for the new year.

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 20 1880

My dear Mr Watson

A revision of the Pollen grains of Abietineae gives me

for Abies 0.050 – 0.070 lines = long diameter

Picea 0.045 – 0060 "

Pinus 0.025 – 0.045 "

If you can in another edition make these corrections in the H. Calif: it would make it more correct! Pinus especially is much out of the way; I do not know how I made it so.

I enclose my note on Eatonia speciosa. I [illegible] your herbarium to Prof Gray the other day.

A few days ago I got a ripe seed of Hesperoloe and find it

exactly. The general sense is
[illegible] but the [illegible]
disappeared [illegible] and [illegible], and
is complete [illegible]
[illegible] that I shall [illegible]
since the print [illegible] be before [illegible].

Yours truly

J Engelmann

whether go west again, to those tempting Arizona Mountains, or east, to Europe! My time of life is getting short and my strength and ability to work will not last very long — therefore I expect to be use[illegible] for some good purpose — the ever true story of the Sibylline books!

Can you get in Europe — good material for the Catalpa study? We want flower and fruit of Catalpa Bungei — Kaempferi you collect yourself — of the others we want good specimens.

I shall make a little package of Opuntia Cactus and Vitis Yuronsis seeds for Hooker, though I suppose Sargent may have sent the latter; please remember me to him — and especially to Mrs Gray, who will be pleased, I, to recognize your New England show-stoving in Old England!

Yours ever

G. Engelmann

St Louis Jan 31 1880

Dear Gray.

How it was possible not to write you in 6 months can only be accounted for by the fact that Sargent's restlessness and energy put us under; he perhaps told you himself that he rarely took or allowed us more than "5 minutes" for anything; but he begins to feel the consequences — says himself that he is "demoralized" about the things left undone, the too great hurry and the unsatisfactory outcome. Yet I am sure indeed I know it, that you and Hooker would have been worse travelling companions — the "5 minutes" of Sargent would have been reduced to 2 or 3, I fear.

Well, with all that, we had a glorious time; all the little inconveniences, troubles and mishaps are forgotten. Long since and the satisfaction and after enjoyment only remain, tempered, however, very naturally with the regret that not all that might have been done was accomplished!

My health has improved wonderfully and I stand this cold and miserable

winter better than any winter since 10 years; I must add, however, that I am more careful than I used to be in younger years.

Your kind letter, written before you left, was received in San Francisco, but the one which you hoped to write soon" never came. I have however seen a letter you wrote to Sargent lately and heard also through Hooker of your doings in Spain and France.

You have heard of our doings through Sargent. He left about the middle of October — & I remained hard at work Cinchona, partly in the rich vineyards (not forgetting the wine presses and wine cellars) north of San Francisco, often with my Cousin Hilgard, and partly in the Southern part of the State, with Perry, often indulging in my Cactus fancies, not rarely to the detriment of clothes and outside

I am home now since 2 months but am still unsettled — things not fully arranged yet — time partly taken up by relatives, who will not forget me — a pleasant satisfaction, but sometimes inconvenient.

I hope soon now to be able to begin the study of some of the more important of our collections, especially the Conifers and the oaks, which will give me more trouble the more I see of them; the simplicity of the former arrangements won't hold out — as you probably have also found in Asters and Solidagos. By the way I have collected a lot of fruit which I hope will be useful to you when you come back.

So you are going to visit Italy with Hooker. I wish I could be with you! And I am not sure that such a thing is impossible — I hesitate between remaining here and working in a killing summer heat, and or travelling — and if travelling,

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Febr 16 1890

My dear Mr Watson

Having finished my Pinus I go down to Juniper; trying to give a history of the genus in N.A. I find a note: Torrey Compendium p. 390 which is quoted somewhere, but which I have not seen. What is it? Torrey in H. N.Y. only quotes Nuttall's Corality, Oswego River. Is in "Compendium" the same Corality?

I can send you a duplicate of his little article of Brown in which he publishes the 3 first American species 1849 in Flora

also his Australian Flora 1868, but I suppose you have it.

I had many years ago a specimen from Hort Kew named Tasmania ex Herb Hooker leg. A C Gunn. This is a mistake or mixing. The specimen is identical with J. chatoor & Mill Archer leg. Gunn never got such a one.

Thus far I had written when I got your note with Hooker's Cat. 99 for Catalpa specimen. I will send him both, a pod I have sent already. We will try to get plenty of specimens next summer to "satisfy a general demand"

unfortunately the person so miserably, that
all character is lost

So you go to Oregon? May we
meet there? What are your plans,
when do you leave us

I hope [illegible] well and
well. So he is going to Europe,
when?

Yours truly,

[illegible] Eng[illegible]

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., March 3 1880

My dear Gray

I have to thank you for Otto Kunze's work and send you herewith a short abstract of the essential points. If you want more, tell me so.

He is right enough, that at the present day the idea of species is shaky — and also that studies Rubus, Rosa, Hieracium, Solidago and any large genus in, not come to the same conclusion and does not feel the sensation of unsatisfied cavillers. I will add for Nelson Lapinus — He is right also that species of very different value exist, and that groups are recognized. — His algebraic method is not new however; I recollect that Klinger 53 years ago taught the same thing, and would in one line supply all the information of a long description.

But Kunze's propositions seem unworthy and altogether unmanageable, and to at least he makes his Rubi not a whit clearer, but rather more obscure than they were before.

I read with interest your note on Alsinanthe and dug up from among my papers some [illegible] which I send you, which may be of interest to you, if it must be [illegible]

[illegible] throughout southern Missouri and Arkansas on plot [illegible] wet in early spring and then arid throughout the season. I took it 1859 for a new genus and studied it [illegible] since. G.

Please return, when you have used it. I will try to have it collected again. I know that it is not rare in the proper localities.

I have finished my pine paper – I shall send it soon. Am preparing for winter.

On the germination of Gymnosporangium, you have a counterpart of Megarhiza!

Nothing else new in Botany with me.

Decandolle sent me some of his publications the other day. But when, what year, have they been published? Prodromus & Monographiae? within the last 4 or 5 years I suppose.

The gray folks are well and send their kindest regards.

Yours ever

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Dear Gray St. Louis, Mo., March 15 1880

The spotted Agave of Schaffner's is the same as Gray's plant, which flowered with you last [illegible] as I recall (but nobody examined it!) Mr Hemsley gives it a new name, A. brevifloa but I have very little doubt but it is A. guttata of Scobria & Osorio

The unspotted one may be A. ovatifolia Rhdyh but I am uncertain for want of good description, or some of the Agaves of that section "Singuliflorae" distinguished in the Gardens may run together.

The former is well characterized by the lobes being twice as long as the very short tube, which is expressly stated of A. guttata, and no other of allied species [illegible]

I learn that you have published some new "Contributions," — a name not got a copy yet.

It seems to me as if your Lemaireanum worthii stoptocaya were nothing but a higher developed aurea, and that the large caulescent plants were summer annuals with the scapose spring form, a biennial, or [illegible] I have never seen.

As to annuals and biennials I have now a specimen of Euphorbia commutata in press for you, fl. beginning of March × a stout biennial with wintering red leaves. It is very often a summer annual. (× we have now Winter again!)

Your note of 11th just in.

No, the acorn of Q. virens is hypogaeous as the others. I send you some specimens today. I have examined a number of acorns of other oaks and find interesting characters. I will send you an account presently, together with my prime papers.

Masters in Gard Chron has covered the leaves of some Japan Conifera, as Murray etc had done, leaving also the dents on the upper side. I have written to him about it. He seems to think that the green side must always be the upper one! In junipers the white, stomatose side is always the upper in Sabinae as well as in Oxycedri.

I am slowly preparing my rosaceae paper.

Glad to get B & Hooker's genera.

You tell me where Decaisne's papers were published but not where. If you not say that I am much pleased with them.

Well, the sense of Kunze's paper is, that species are characterised as different values and form smaller or larger groups.

Yours truly
G Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., March 24 1880

Dear Gray —

Thanks for the generous [illegible] enclosed [illegible] money to pay for same.

Parry [illegible] the days very pleasantly. He takes a few specimens with him for you and Hooker, C. [illegible] specimen for you and C. sp. & big[illegible]. for Hooker. The latter you no doubt have. — I should be obliged for a good specimen of flowering C. Kaempferi next summer.

Parry and myself talked over the trip to California and Oregon next summer and it seems as if it would assume (the late) more consistency; my health getting better.

I envy Parry the good time he is going to have with you.

I am astonished that B & H. should have ascribed phyllodia to Sarcodactylis instead of double leaves, as Mohl long ago demonstrated.

Seeds of Sabina [illegible] 3 to 5 in some species, not only 1 or 2

Pseudolarix ought to have been kept separate.

But these small matters

really ought not to be noted in a work of such vast research and general accuracy.

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., April 13 1880

Dear Watson

You must be anxious in regard to Parry's or I am in the matter.

598 is evidently one of the gigantea portable cylindrica.

597 I have not but should like it.

Parry tells me that Cereus gigantea is common along the Rio Colorado within the limits of California on rocky slopes.

Please therefore insert it in Flora. I have nothing else to add to the character given in pag 247. Or perhaps rather add a few words: Columnar, erect simple or with few erect branches towards the upper part; ribs 18-21; areolae ovate-orbicular, woolly when young, bearing 12-16 exterior slender and 4-6 interior much stouter spines, the former 1/2-1 1/2 inches the latter 1-2 inches long; flowers extend out near the woolly top part

stem and branches, 3 to 5 inches long and 2 – 2½ inches in diameter, open day and night, of a light cream colour 14 – 18 greenish yellow sleader stigma, oval fruit 2½ – 3 inches long, beset 30 or 40 small scales which bear a bunch of brown wool in the axils, irregularly bursting at maturity and dropping the greenish white edible pulp with it black seeds.

The woody skeleton consists of long rods, corresponding to the sinuses between the ribs, in ginger plant loose, in older ones ~~inter~~ connected by interwoven fibres and forming a sort of a hollow tube. The leaves [illegible] is an important article of food to the Indians.

Patterson has a Gentian from Mrs Austin which I first took for G. ottiger. But it is evidently a new species which might be named G. laxiflora. I suppose Gray has also got it from San. Source.

Yours truly

J. Donnell Smith

in postal stamps and an oil cake of seed of Ohian Bungeanum which Gray sent to him the other day

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., April 21 1876

Dear Mr Watson

I have received from Mr Vasey a better specimen of M. Wrightii, and find it quite different from the very young one described by me under the name of M. Deserti. I hasten to correct my description:

M. Wrightii n. sp. subglobose or oval, simple heads with subcylindric deeply grooved tubercles, radiating spines 25–30 straight, circular, grayish white, larger ones with reddish tips, 5–8 lines long; 3–4 inner spines stouter but shorter; 5 or 6 intermediate ones ~~above~~; fruit an oval green berry with oblique obovate curved leather brown pitted seed.

At Swanpah — as before.

Mass 2–4 inches high, 2–2½ in diameter, liberally about 3 inch long; flowers unknown. This as well as M. Arizonica belong to the group of M. vivipara and may eventually have to be united with it.

Cylindropuntia Emory, on mountain ranges in S. Calif. in desert, northwest of San Bernardino. Terminal spines of leaves in vigorous plants 1½ in. long and dusky. (S. Parish)

I happen little thing is closely allied to Erythraea but seems to have no twisted anthers; will examine again

That Austin gentiana differs, or Calycosa by the habit, by the acute lobes of the expanded [illegible] corolla [illegible] & by the long stipitate ovary [illegible] capsule. It seems [illegible] of [illegible] G. laxiflora.

A [illegible] Schreberi, plant. Very near [illegible] but anthers strongly twisted stigma obovate capitate scarcely lobed*, [illegible] obovate having at upper half. [illegible] Erythraea; [illegible] flowers. [illegible] Chatoumous. [illegible] can not refer it to any genus in Hooker & B. Gentiopsis would be a good name, G. erythraeoides [illegible].

* As in Erythraea the lobes will separate in making short-stipellipsum! A.G.

[illegible] Gentiana

No constant difference in the form of the corolla: in the lobes Dr. Lemmon's 1138 is a complete intermediate (as compared say with Coultas Wyoming plant.); and for most of the specimens laxiflora is a very poor name.

A.G.

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo.,. 187

Dear Gray

Dr Master's paper, I notice in Gardeners Chron. in your dis. Vol. XVII p. 547.

"The pulvini of leaves are not leaves, but cortical substance!" — Why not cortical substance of the leafbases? p. 549 Stomata most abundant on the two lower sides in species, — this is not so; the reverse is true in all species.

Leaves rarely unusual position beneath the upper epidermis! — he reverses the leaves, & Vitis Southerana, & discovers, taking the upper cuticle side for the lower one.

The movement must be studied. I have no opportunity to examine into it.

Pulvinus or nodulus is called a flat leaved species. It is nearly as squareleaved as [illegible]; and why he perpetuates certainly error, calling it Saxifraga, is inexcusable.

p. 551 note the leaves of Vitis Labrusca are not or scarcely angular, — here again the cuticle beneath the upper epidermis!!

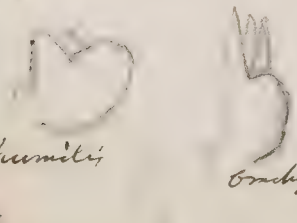
The same error occurs in the papers published in the Gardeners Chronicle; Master's cannot conceive how the lower side of the leaf can not have fewer or no stomata, — in fact it is always so!

You should take a leaf in the [illegible], as I have given you a cuticle.

I have given the same to Dr Masters; whether it will do any good?

Well we, i.e. I, am most ready to start; will see how that triangular arrangement will work, with Meeker, Parry & Omaha and Sargent & Salt Lake.

I have told Greene that his Arch. novaeli is the bad brachystephan; but he persists, and now after making a more thorough examination I find that it is distinct, and that all the northern forms (Gordon, Parry, Hall & Harbour, and Ombrigee Valley here) and the name of novaeli is bad. I have it from Hall 4 inches high — unfortunately [illegible] mixed into [illegible] Martin, or else we might call it Greenei. The horn is a very short obtuse broad crest, the hood stacy, very obtuse with a broad tooth [illegible] to the hood, while in brachystephan the teeth or lobes are much longer; the process is short and obtuse, in br. long and pointed. It seems intermediate between brachystephan and involucrata, and I must move Greene to adopt the name of humilis for novaeli.



I had on my labels first called it A. involucrata! but afterwards decided for brachyst. Greene is right as to its distinctness.

Yours very

C. [illegible]

GEO. ENGELMANN, M. D.
3008 Locust Street.

St. Louis, Mo., May 4 1870

Dear Gray

I felt the deepest sympathy even pity when I learnt how you were almost helplessly enfolded in the meshes of those worthy Asters; I thought of Camille Desmoulins succumbed to the hideous monster, the Compositae, and the weird poem of Heilgenstadt "the flowers' revenge" came [illegible] before my excited imagination. Mentioning however it was a fair point the surrender, and you, I mind to myself are made of other stuff. And here to my great relief comes Dr Hagen, and writes that you had been to the Museum that day, "wie immer frisch wie ein Fisch im Wasser" he, I should that! So you are not rather [illegible] sunken eyed disponding, half dead from the action of the fiendish Asters, so much better! And I hope you will cover and chain them down at that

Yes Shimper is as you say older than we are. I only met him once, 15 years ago, he was as ardent a zoologist as botanist.

Ulex europaeus, the earliest, began to bloom with us yesterday, ten days later than last year.

Gentner in a letter on very pious says that I received 45 of the species! Does that appear from the wording? I carefully examined every one of them and commented only such that I had examined myself

Not enough! The letter is too long for your leisure — though it is not bad to break in occasionally upon the Asters!

Yours ever

J Engelmann

Do you go to Europe — or Asia? We may meet again here, if I live long enough. And first for California!

[illegible] cones, [illegible] I can at any rate let them pass muster. That enough [illegible].

I guess you [illegible] specimen of [illegible] deserves a print. I send a few seeds. How odd and distinct it looks; [illegible] [illegible] long cones. [illegible] have [illegible] [illegible] can not make much out of them [illegible] [illegible] [illegible] [illegible].

[illegible] proof of your good humour are your "notulae exiguae" I am always pleased at such good letters even if they should be aimed at me! It is so necessary to curb down occasionally the exuberant fancies of your (young, oh!) botanist.

As to Gentians I have nothing to say, have very scant material and can not [illegible] [illegible] [illegible] the little erythraeoid thing is no [illegible] [illegible] [illegible]; the [illegible] do not [illegible] to Fois, and the lobes of the stigma [illegible] if you find I could not [illegible] a good [illegible] all [illegible] with [illegible].

Dr Masters ought to have [illegible] his paper. I dont even know what it is about. Yes send or loan it to me, if you think it interests me.

Albert Dean albicaulis. I had already reduced it to a form of plicatus when I worked up the Californians in Cantrige last fall.

There are 3 [illegible] pines [illegible] can only be distinguished by their cones Jeffreyi, albicaulis and arnotata but [illegible] other [illegible] identical, and we know how the cones do vary, e.g. in P. sylvestris and of P. insignis. I [illegible] make a very fair species upon the strength of cone variation; the cones contorta vary away [illegible] the cones are convertible if unsupported by other characters;

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 4 1876

Dear Mr Watts.

I return the page you sent, though I do not know what you want it. I have no particular opinion about those forms, and having had a single specimen only are not positive that I am right.

I get a new batch of specimens from Mr Parish, and if he keeps on may say have an addition or correction of Cactacea some day.

The seeds now flowers and fruit of Opuntia Rafinesquii, so that at last the knowledge of that species seems complete.

You may add in its proper place: flowers dirty greenish red, [illegible] capitate. Fruit oval [illegible] or a few seeds but sometimes, though sparse, with numerous seeds.

The seeds I believe have described; the leaves are minute, subulate, only 1/4 long [illegible] Cylindrica have [illegible] Rattlesnake line.

[illegible] of [illegible] other [illegible]
3 [illegible] long. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] spreading;
[illegible] [illegible] [illegible] of [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

Yours Truly
[illegible]

[illegible]

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., 187

Dear W.

Thanks for the Sesga material. Being still on my back, can not autoinoculate exercise but have no doubt that Gibbs' plant is — Cuscuta and confirms the species, but Gray seems to be = T. canadensis. I just getting for — Smith living Agave sisalana you name with cert. for — ~~[illegible]~~ dedication. — You know that old worst Sabadous have pulpy fruit valves. — Both is anticipated and produce lots grows: dark blue region. Yours

G E

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

S. Watson Esq
Cambridge
Mass

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 13 1880

Dear W

I just got your postal and hasten to send you the description of that new and quite interesting Euphorbia.

Among the few Mexican Euphorbs sent by Gray is also a Linaria or rather filifolia Lag & Segl. plant which I believe you have named and as a strangerthan with silky entire small leaves and strongly reticulate seeds. What are they? The latter can not well be the Lourcolat which must be a much larger plant with different seeds.

Did I send you an account of the flowers of Manill. dentata? I had them the other day from Parish. I have written at once to get more, which I fear would be in vain. So it can be better to save

trouble to write again.

Spal, 20-25 in one rows narrowly
lanceolate acute, primbriate
[illegible] almost
[illegible] ab[illegible] in a single ~~row~~ circle
narrowly lanceolate acuminate,
[illegible] primbriate at base, light
straw colored [illegible] purplish
at the tip; stigmas 5-6 spreading,
flowers [illegible] 1 inch long and wide

Seems to closely ally to M chlorantha.

[illegible] contribution and
anything enough and will be
glad when you can share
the gate!

Yours truly

G. Engelm

What will become of the Herbarium
when you and Gray are both
away

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 18th 1880

Prof G. L. Goodale

Dear Sir

Thanks for the box of fruit etc. of Agave from Valencia. He has sent me a box of specimens, lots, one very large one, which may flower in Shaws Garden so that I am not in need of living plants — thanks.

The plant was described by T. Moore in Gard. Chronicle N.S. IV. p. 485, with woodcut (so quoted — I have not seen it — what is the date of the publication?) and again noticed Gard Chron vol VII, 529 1877 by Baker.

As I have now full material I shall describe flowers and inflorescence, but as we take little interest in these things here, will send it to Gardeners Chronicle.

It belongs to my sect Spiralae (Littaea) but is very peculiar because instead of 2 (or sometimes 1) flowers together there seem to be always 3 — at least in my specimen, the central flower being developed

which in the others is always abortive.

Please show this to Mr Watson and have with him to me about the same subject, and also tell him that I do not care to write to Mrs Andrews, which I have already bothered about Rugel's Scutellaria placoide, which could not be found in his Herbarium (all the florist folks found it now).

Yours very truly

J. Engelmann.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 28 1880

Dear Mr Watson

Thanks for the 'Oak groves'. And before you put it into Hor. Cal you ought to know whether it is really Q. agrifolia; though that may be correct enough. Brewers dimensions of trees are even larger than those given, as stated in H. Cal.

Very nice of that he has sent you a specimen of Euphorb platyspema, so you have two fragments, one may make one species.

Parish send more specimens and information which comes dripping slowly and must make you impatient.

The flower of Opuntia bigelovii is greenish yellow, tinged with red especially outside.

The flower of Mamillaria desertii does not open wide, as I had stated but remains somewhat pear shaped and less wide than long, so Parish says.

You are having a good time in Boston this week, Redfield tells me that he and several others will would be there also.

On the Cat. page 4 is blue and the rain one of C Kaempferi. Dill

of someone in Cambridge get me a good flowering specimen pressed and examine the flowers fresh so as to compare them with my description of C. speciosa: proportions, dimensions, colouring etc and time of flowering compared with the others.

Yours truly

J Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., [illegible] 187[illegible]

[illegible]

Did you think of that Rosa lucida, growing on roadside in Cambridge, especially near the geological district? We spoke of it last fall, and it must be in flower now, I should think. Please get me a specimen — and also one of Catalpa Bacuppei. It is perhaps not yet in flower. A examination of the fresh flower, to compare with ours, ought to be made, something like my analysis of flowers of C. speciosa and bignonioides.

I am shocked at J. Parish' frequent changes and the consequent alteration in his account of the flowers. I suppose you have found yourself no doubt it is to make a [illegible] which from such reports. I have now good dry flowers of Macillari deserti and Parish says that they perfectly well

represent the great flower. They
often will associate with that
it may occur in your flora.

Flowers make a dirty yellow stripe
a stripe of red — only one inch long
and was with a very fully open.

No other alterations and corrections
for the present.

That Agave, which I took to
be Mahensis is growing here
with us and seems to differ considerably
from the Utah Species, but before I
see flower and fruit I could not
decide.

I am getting ready — when will
you start? Must you finish
the Flora first?

Yours,

C. Engelmann

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., [illegible] 187[illegible]

[illegible]

[illegible] 40 [illegible]

[illegible]

[illegible] book [illegible]

[illegible] a little [illegible] it [illegible]

[illegible] but [illegible]

[illegible] it [illegible] good [illegible]

[illegible] only [illegible]

page [illegible] there.

[illegible] more useful;

start, [illegible] I feel more useful;

the [illegible] thing appears [illegible]

[illegible] home and the [illegible]

perhaps never to return! [illegible] I

could perhaps not have gone without

such a trusty friend as Perry, and

I do not know what will my [illegible]

[illegible] will become of

[illegible] certain stages; for

I regret [illegible] be [illegible]

[illegible] attend to his duties.

that is a wise saying, two species of a new genus! Of course I let you have your wish about name etc.

No, your "Natura exigua" in Bot Gazette were not aimed at me, but those annotations in Watson's letter about my filing in our council of the spirit of Natura. I repeat, that I entirely approve of it, it is very necessary to guide and occasionally to correct the admirable ignorance and presumptuous zeal of those newfledged botanists, without weaks, lest it damper a total extinguisher.

I have not been able to finish that Bodie paper completely, but it may get press as it is now (though Dr Castle actually began at posthumous paper!) if I should not be able to complete it. But it says heavy on me that I have not distributed the multitude of Wine and Oak duplicates, which have accumulated and which could do a deal of good elsewhere, while here it was a bitter thorn. It must be my first work, if I return — if not — then it will be a mass of useless rubbish.

I got yesterday a bouquet from Masters his Japanese Conifers which had in fact Chow. And a short

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

2.

St. Louis, Mo., ...187

paper on leaves of Certain Conifers (Ext. Lin. Soc. Jour.)

It contains some queer things which I didn't get time to write him about. He is evidently still struggling with the upper and under side of spruce leaves and mixes up spruce and firs (or spruce, firs and balsam firs, as he says it). I have been quite a correspondent with him this last year, especially as he persists to call the stomatose side the lower one, forgetting that many other conifers have their stomata on the actual lower and upper sides, such as junipers. I get quite settled with a pen for a while.

Shall I hear from you before you go? Letters addressed here will always reach me, or they will better may come under Sargent's address, (if in about part of year.)

I expect to leave here about the 21st

Remember me to Mrs Gray and your young folks also. Yours truly

G Engelmann

Dear I wrote you last I had a nice
letter from Hooker, about conifers etc.
and calling my pine paper a capital
piece of work. He is some [illegible]
when others praise the picture
[illegible] for Rhetta than for me,
[illegible] Candle [illegible] can be valued
[illegible] a
[illegible] a great [illegible]
[illegible] myself a good [illegible] topsoils, [illegible]
we are apt [illegible] or getting
[illegible] yellow jacket, yellhunter, [illegible]
[illegible] the expression [illegible] capital
[illegible]

wells, that came under my eye, and am satisfied also that Grandy Rich is perhaps the only Allen's low situation, but the great forest resource of this country is Douglas fir, which and low growing, compactness and magnificent and useful and useful for almost every thing.

And so you will leave soon also! A happy journey to you and to Mr Gray, to whom please remember me.

If you drop a few lines with to San Francisco care of Ruhl Brothers box 1299.

If you see Brother, give them remembrances from me. I have not found time to write. Will do so to Brother when I can tell him about Lewis Cornelor

Yours ever
G Tompkins

Portland Aug 2 [illegible]

Dear

Nearly two months have passed so rapidly that I was today quite surprised that this letter will reach you only a short time before you leave yourself

My excuse for not writing must be that I have found scarcely any time to write to the children and have mostly confined myself to that miserable and still blessed substitute for postals.

I do not know whether you are informed of our steps. A few days at Salt Lake where we found Jones a good fellow who will learn and improve, and Carpenter and Kinner at Ogden and on to San Francisco, where

Nothing so gr[illegible] have of very unsatisfactory [illegible] by steamer to Portland and without stopping through the Sound to Victoria and then up Fraser River, where we made the first regular Mountain ascent, near Fort Hope at the angle which the river makes coming from the North and turning west. We were [illegible] among the snows and were delighted in finding several of the Alpine Conifers; among others the Abies amabilis which is really distinct from grandis. I have sent an article with photographs taken here from Oregon, to Dr Masters, for the Gardeners' Chronicle, [illegible] high up, Ventricola, and albicaulis (which is not white) evidently distinct from glaucifolia. The lovely Oregon Grape, Schoolcraft

Back through the Sound to Portland. Up to the Cascades in the Columbia, where I surprised alone ascended an Indian trail to Douglas original locality where amabilis is splendid. Newberry's figure in Pacific Rep is in the main correct.

We here we are ready to leave tomorrow for the south — Coast range, Cascades, Sierras.

Not [illegible] here.

Nancy left us a week ago. I go with Saturday to visit Adams. I persist and [illegible] the active life & great (or no great) exertion has a beneficial influence on my health — but find the greatest impediment in my knee which has not got over the effects of the fall 7 months ago.

I have studied the Conifers

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan. 3 1881

Dear Gray

Thanks for the Gentian. It seems really different from Wilfjeni the calyx approaches somewhat small forms of Amarella, but there are other differences. Let Lemmon shoot off his pop guns! I will write him, I owe him a letter anyway, he wanted me to name plants for him, I say that stiff Yankee, Pringle was vacuous, had into giving Greene plants to describe I do not know. He may have got into a fever, that Lemmon might precede him!

I should add that that Gentian has no fringe and has glands in base of corolla and is therefore a true Arietophila, Fri, while wilfjeni has fringe — Sect. Arietophila and Amarella are rather too little distinct.

Pringle has sent us his Euphrasias among each is a new one (also several new ones from Hirsch from Curtiss) and a few other things but nothing new. I suppose you will get the wish of his collections.

I am busy putting out Aster and Solidago this year, am overhauling now the old collections of my brother for that purpose

which have been shamefully neglected.
But do not find much in it for you.
Windheimer you got all at the time
(30 years ago!)

Write but best wishes for
New Year!

Yours ever

Engelmann

Hand the enclosed to Watson if you
please, after reading.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 3 1881

Dear Mr Watson

I just get your little package after the letters have come before. The Euphorbia is decidedly and characteristically E. adenoptera which assumes rather different forms, the seeds also are characteristic. I have from Bigelow among several rare also a new Euphorbia.

The Croton I will study when I have a little more leisure.

Thanks for the Sorbus. But how does sambucifolia and Americana differ? The more eastern flowers of the former approach in size and hairiness the latter. My new species, P. obtusa, seems quite distinct; it comes from Mt Adams.

Brewer and Bolander send two different Cypresses from Clear Lake, the more slender one is Hookeri glandulosa I suppose, = typical Mohrbianum which I have studied in Edinburg (Murray's specimen) and the other which I take to be Goveniana.

Goveniana, you know, comes from Hartweg's Monterey specimen ~~which~~ and I suppose I have the same from Bolander, but have also from Monterey

not seen it myself there (nor P. muricata, which grows with it fide Bolander). The Mendocino Cypress (Bolander and Philip & Sargent) however agrees best with the cultivated Government of European gardens, which look quite characteristic and different from the Monterey and Marin County plant. Send me a specimen with fol. and male fl. from Cedar Mountain (I suppose you wrote by mistake Cypress Mountain?) with a tree?

This cultivated Government you may have from Hort Thurel, and many other places; it is thin crowned, very coarse. But enough of this perplexing genus. I hope Sargent will see that he obtains specimens and full notes from all Californian Localities. Bigelow has not seen any

C. Arizonica is probably a good species. but of course a mere guess of Greene's. It seems different from your Guadalupensis though with similar bark, they must be compared again. No Mexican specimen like it

Yours truly

J. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

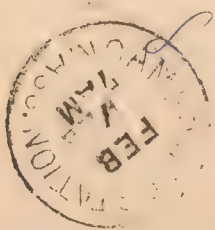
St. Louis, Mo., Febr 3 1881

Dear Mr E

Yes, send all you have of Conif. I will take care of it and return it. It will go all together with mine in one labor. I am just arranging my collections preparatory to studying them

Yours. GE

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER



L. Watson Esq
Botanic Garden
Cambridge
Mass.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., March 5 1887

Dear W. I had that Euph. man's letter from Greene some time ago — It is described in Bot Gaz. and I take it to be a good species though rather close to vetiloba. Also his new Cupressus from S. Francisco which I referred him to you "as you know now all about Cupressus" — Is it so? What do you say to his Bigelovia?

Glad to get your corrections in hand. You might send them by Sargent who will be here in Cam. in 2 weeks, I think. Yours truly

How do you like secretary's work — a hard winter? G. E.

BOSTON MASS. MAR 8 5 PM 1887

POSTAL CARD.

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

MAR 5 4 P M 0.

ONE CENT

Prof S Watson

Bot Garden Cambridge

Mass

1.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., April 2[illegible] 187[illegible]

Y 2 11AM

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

J. Walton Esq
Cambridge
Mass.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 16 1871

My dear Mr Watson

I am, in a measure, on my feet again, and have examined these 2 sp. of Tsuga. Both are my new T. Caroliniana, Gray's as well as Gibbes'. Gibbes, as well as lately Carter, insisted on the distinctness of the species, against adverse authority, and they prove to be right. Gray seems to have collected his specimen without any further thought, having seen no cones, but the leaf characters are positive. Carter's letter positively that both species grow in N. Carolina.

It was undoubtedly one of these N. C. specimens in Herb Gray which I hastily examined when in Cambridge Sept 1879 for leaf structure, from which I received the notion that T. Canadensis leaves were not always destitute of strengthening cells. I have, since, examined numerous leaves from all parts of its geographical range and know now, that they are always recognized by this absence and that always distinguish it from T. Mertensiana and mostly from T. Caroliniana.

The remark in Flor. Calif 2. p. 121 must therefore be altered; leaf structure is not reliable as these cells are ~~occasionally~~ never found in leaves of T. Canadensis, though usually absent.

Before writing this I got your P. C. of May 12th. Thanks, I shall try not

to spend the entire summer in this mean way. Hot weather instead of curing, helped keeping me low; it is cooler now and I feel a little stronger. hope to get out of the house next week.

Pringle sends nine things, was just in right time for flowering oaks, etc — Got P. Arizonica abundant — of which I fix only a young tree!

Nothing about Ephedra seen, let that rest till I can fully examine into it.

Yours truly

J. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 30 1871

[illegible]

[illegible] you have the
[illegible] of Dr. Carlson and other
gibberish.

My health is improving but will
not be able to join Pingree, who is
very urgent, but say that if I can
not come to the meeting he will bring
the meeting to me [illegible] I do not!

I have given up formally, unless the
[illegible] that shall dare me off and
will now be able [illegible] a little botanical
work [illegible] to strengthen
and these confounded [illegible] can [illegible]
[illegible]

I enclose a specimen of mountain-laurel
[illegible] from San Diego for the Herb.

Yours truly

G. Engelmann

That is your principal work now!

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 13 187[illegible]

Brighton orchidiana was collected by myself & kept. I have a single specimen but hope that Parry whom I have sent there, will get it again. Anne Withers grows or was lately at Stephanomeria is grows there: Steph? multiflora also.

I send a new Silene for Shasta, perhaps near Pulcherrima or perhaps your Oregana, of which I find no description (where published?) It grows with montana and Cooke's much like it; villous clammy pubescent.

If you want Campanula scabrella I can send a few specimens

Yours truly
J. Engelmann

POSTAL CARD.

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

S. Watson Esq

Bot Garden

Cambridge Mass

St Louis June 22 1881

Dear Mr Watson

Lemmon has had a good find in Arizona, a Vauquelinia nearly allied to the Mexican V. corymbosa but apparently distinct. Unfortunately I can not compare the figure in Humb & Bonpl N. Q. equin. 1. t. 40 but have HBK N. g. sp. VI. 238 at Shaw's. I find there a full description, minute indeed, which helps me to distinguish the species.

Could you make me a sketch of a leaf of V. cor. on the above plate? Not only the length of the petiole but also the manner of dentation seems to be different, besides the shape of the flower, e.g. my petals are orbicular. I enclose a leaf of Vauquelinia corymbosa as I am inclined to name it.

It seems that Bentham & Hooker Fil. have not seen Vauquelinia.

Any thing new from Gray?

Yours Truly

J. Engelmann

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 24 1881

Dear Mr Watson

My [illegible] seems [illegible] for Campanula, though it has [illegible]

I take in [illegible] Campanula [illegible] [illegible] a few plants of [illegible] [illegible] hope they will get [illegible] specimens.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] Cirsifolia (Bongardii) and [illegible] flora, but though I have seen [illegible] [illegible] [illegible] [illegible] [illegible] not [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

I made slow progress in my [illegible] [illegible] [illegible] California & [illegible] [illegible] [illegible] [illegible] a new [illegible] [illegible] [illegible] [illegible] (No 574) [illegible] the best discovery [illegible] made by Lemmon, of his [illegible] I have already written.

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 28 1871

[illegible] Watson.

Thanks for the information [illegible] you might have saved the trouble of copying the plate! [illegible] reference to [illegible] would have been [illegible] [illegible] great oversight in me not to look in Bot. [illegible] nor in your index, and in Bot. Calif. I could hardly have found it [illegible] not look [illegible] specimen [illegible] it in the index.

[illegible] are the leaves of [illegible] [illegible] few flowers of Bumelia [illegible] [illegible] Do you know any [illegible] [illegible] [illegible] [illegible] 96 [illegible] what name do you have it? [illegible] it is Bumelia [illegible]

Yours truly

G. Engelmann

Mdowie July 6 '81

Dear Mr Watson

On the other page some notes and corrections about your Abies of 1880.

Why is that Greg Bunkii now B. ferox? I suppose you have authentic specimens of B. Cernua and have compared it with it.

I have B. lyciodes from Texas but mine from Arizona is different: it has very few flowers in a cluster and has woolly calyx and ovary; a new species, B. pauciflora.

I am working at a revision of Abies, but don't make much headway in this fearfully hot weather.

Yours truly

S. Wm Williams

Nov 1

I have reviewed the fragments of leaves retained from your specimens, and find that those of Aug 23 and 25, the latter with cone belong not to s. balfiana, if I have said so, but to grandis, or rather to that "bastard" which I had classed with Sargiana, and so in notes given yesterday belongs here & Cusick's

Where were you Aug 23 & 25? I believe you told me that it was in the Mountains of between Idaho and Montana. That would bring this specimen [illegible] and would upset our theory that it was a low land species, peculiar to or at least near Lidewater!

Only that you collected [illegible] only 14 in May 5 would be subalpina, which would be all right though it extends to the Cascades. Yes, I see that also in Sept & Oct 6 you collected it

The only difficulty is in the specimen of Aug 5 (12 mont Cannon) in which the scales are those of grandis, but the leaves doubtful.

This is also for Prof Sargent.

Note that Mam Arizonica seems to be a large form of M. virispina [illegible] Mex Bound. I have it in flower now and can not distinguish it.

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., July 7 1881

Dear Mr Edelson

It would be a great deal preferable to be in Cambridge and to be able to compare books and specimens instead of troubling you so often; but when examining doubtful things, references to be had only at headquarters become necessary.

Today it is that Rhus of Wright, which Gray in M. bot. 2. 27 named Rh. virens. I collected what I consider the same (not pinnate) but it is a distinct species, trifoliate, and I shall like to examine all known. I shall be like to examine if Wright's specimen is this or the real virens with pinnated leaves, and now (after 35 years) still shining and dark as L. shining type is collected by Bolander. Green and a print of a Mangonian from California which may be L. semosum. I write for full specimens.

That Rhus I named name in allusion to virens: Rh. pellens.

Note in Gray's Synopsis pag 99 Bumelia texana Buckley (under B. Laniginosa). I find no such name, but B. arborea Buckley in Proc Ac Phil 1861 p. 461, which is a tall B Laniginosa.

My Dumbia description may possibly be an extreme form of the same, desperate.

Pringle has for 2 the same copper colored Pottlewa & considers it perennial without doubt.

Rev Brackin writes me sometimes, — Iowa poetry has closed for 20 or 30 new species — Earlier i.e. sp. which he can not make out !!

I hope to get off for a few weeks to the Mountains of Colorado, very in our work, but letters will follow me.

Yours Truly

G Engelmann

It seems you get a letter from me every day or two ! Well, when I am off I won't have so much to write !

Berthoud's Pass, Colorado
July 24th 1881

Dear Gray

Does it take all of Mount Gray* to remind me of you? No indeed, I have all the time so much to talk to you about but time flies so fast, occupied with so many distractions — always more to do than I can accomplish. Well, you know how that is. — your last and only letter I got last fall in California — a splendid trip we had — only too much hurried and no leisure to study, but I saw and learned and enjoyed a great deal. Home again at the end of November the arrangement and study of my collections took up all the time that a light recommencing professional occupation left me. My health was excellent, but in April, just when I proposed to go west again and study western vegetation in spring — or go to Europe — I was undermined yet — a severe attack of rheumatic gout threw me down and kept me housed for nearly two months, and all my plans were deranged. Then the heat drove me out of St Louis, and not hoping much from the seacoast I fled to the Mountains and to the highest

* which I saw from Mt Elbert the other day, for it contains a climate as bright as

I ought to write to Dr Hooker about Conifers, but defer it till I can better satisfy myself: I may only say that Abies nobilis is certainly distinct from magnifica and that it does not occur in California. The Crested cone tree of Shasta i.e. the magnifica as Dr H. has always insisted on. Subalpina here does not only come up to the timber line but is with Engelmanni one of the some which climb several hundred feet above timber line, a few feet high, as Muir found it in the latitude of Sitka. Pinus ponderosa & Jeffreyi seem to me distinct as well as P. Arizonica seems to sustain its character though Muir Lemmon and even Parry want to unite all three. The great difficulty lies in conculor, which appears to pass through the Californian form (Lowiana) into the true low land Oregon grandis, Unite them all under grandis? divide them into three or into two species? You may do almost as you please, or rather as your idea of species permits you to!

I was glad to hear that Mrs Gray and your (open to hurried?) trip so well — please remember me most kindly to her and to Dr Hooker

yours ever

Asa Gray

As a postscript I ask: how are the Asters?

inhabited point, a sufficiently comfortable house, and here I am since 4 or 5 days – at first raining every day but today the loveliest spring weather, fires morning and evening – flowers, o such gorgeous flowers! They strike at first, at once and before every thing the sense of the beautiful, the scientific interest comes afterwards. It seems that this, the latter part of July, is the most finest season to enjoy the Mountain flora – and they say that rain and hail are of almost daily occurrence, and we have had our share of them, but since a few days the weather is perfect – (Rain hail in afternoon again!)

What shall I say of my doings? I take things very easy, try to recuperate, and to study plants; I hope to stay a little longer here on the pass, where the thin air seems to suit me perfectly; it only makes climbing difficult, even if the condition of my legs would not preclude much exercise. But you know that even in a small way we can do something. Today I opened some flowers of Gentiana acaulis and found at 9 A.M. the anthers just shedding pollen, stigmas spreading, and full of pollen! Self fertilization and no proterandry! While I took the latter for granted in these Gentians the question arises, whether under certain conditions the same species will not behave differently and accomodate itself to circumstances? I must watch further and at lower altitudes where I think I found this species proterandrous; or does the season make a difference – first and later flowers?

You may have seen, that I can not admit Campanula Scheuchzeri in Colorado, and that I thought that all, which we called so, was the erect-fruited C. uniflora. But since I am here in the mountains, I think differently. C. uniflora, at least what I take for it, was found only high above timberline with Dryas etc. while the other is common in the meadows about Empire and was not seen higher up. I shall examine both again, both have rare erect fruit, opening near top. Please look if you find leisure, in Kew at Europeans typical C. uniflora; mine from these mountains (very scarce) has obtuse leaves with a few glandular crenations, say two on each side of the leaves – obtuse lower calyxlobes, as long as tube; it has a rather stout rootstock, the other I think is also perennial but with filiform rootstock. It is an undescribed species!

And so you will not return this fall, Eastwood tells me; thus I may get met you in Europe for I now propose to go next spring. What are your movements? I have heard from you from different friends. From Brussels only a few weeks ago, and in Berlin they hope to see you.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Hot Sulphur Springs, Middle Park
Col

~~St. Louis, Mo.,~~ July 21 1881

Dear Mr Watson

I got your letter of July 11 at Saratoga. I will want to see the gen so that I can visit them I not again overlook it. It is quite possible that Sarracenia is but an imperfect form of Darlingtonia, but it has nothing to do with [illegible] other patterns may vary a little, but we know more about it. [illegible] is identical with mine; people will get more of it, I expect, but [illegible] must be very [illegible]. The only thing I have seen here is Aquilegia [illegible] Saxifraga [illegible] as a single [illegible] tinctoria, [illegible] Gentiana [illegible] above [illegible] will be a fine [illegible] Columbine.

I have written to Dr Gray [illegible] Mr Rose.

My notes about Cangyan be complete [illegible] little [illegible]. Have you good Cangyan specimens of it in Herb, and [illegible] Colorado specimens? I found it very sparingly on alpine heights, whether the same as the Sang. I can not now say but suppose so. Well the so called Sangs dorfiana is a distinct species, allied to uniflora and not to Schenckjeri, which I will study better when I come down to Cangyan again. The question with me is, whether the original [illegible] is our plant or really a form of Schenckjeri; if the latter, then we must have a new specific name. Cangyan

x where I have seen it abundantly a few weeks ago

I can't give it up again, and travelling in this and bringing myself back get young again!

It is regular that as I always write, the boys over in California know that lumbago is permanent. They ought to work it out, or have worked it out long ago.

Can you find in Herb. whether Lewis's Oxytropis is our plant ✗ or = Scheuchzeri?

Yours, Truly

J. Engelmann

Letters will reach me Directed to Empire City, Colorado

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Empire City, Col

~~St. Louis, Mo.,~~ Aug 15 1881

Dear Mr Watson

Thanks for the information in your note of Aug 8. By breaks in the RR caused by floods we were cut off for a week from all communication with the world at large, but yesterday brought lots of letters. In this far off region Railroads seem to do as they please and Uncle Sam's Mail waited their pleasure no letters and no passengers going or coming!

I of course do not have King's Report here and don't know what you say about Campanula; but I have studied the living plants here and find 2 very distinct species with erect fruit, uniflora — on the higher alpine slopes with stout rootstock etc — and patuliflora n. sp (the former Langsdorffiana of Auct. H. Colorad) common in subalpine meadows, e. g. here, with filiform rootstock and filiform stolons. Schweinitzia has nodding fruit

Singular Summer every where great disturbance in the atmosphere! Hot and parched in the Mississippi valley, rainy here, Thunderstorms almost every day — cool and damp with us. The snow has almost entirely disappeared here

I am not doing much in Botany — only what Gray calls pottering

Would seeds of Aquilegia Columbiana be desirable? I have gathered some

My next address will be Cañon City, Col

Yours truly
G Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., October 1st 1881

Dear Mr Watson

I got your Cañon City letter to day. I have been back about 2 weeks. The Cactus is certainly Wheelleri, though the surface of spores is rather smoother and sometimes quite smooth. The size is extremely variable in this species as in the other small-spored American Cactus species, J. melanopoda, which also has sometimes smooth spores. I have examined Howell's specimens already last winter, coming to the same conclusion.

Has the garden got several Cacti which I have sent from Colorado and New Mexico through Prof Sargent?

On the whole I have got many interesting things but I believe nothing exactly new. At Las Vegas N. M. I have found that form of Opuntia pulchella which I take to be O. Emoryi Gisea, covering whole hill slopes, while undulata Gambelii was near by

Q. Shortes Wolandsi is never
positively indicated as S. California. I have
found it abundantly in Colorado! another
proof that the change of name was proper.

I do not feel settled yet, but shall
resume botanical studies, esp. of Cacti, have
paid a good deal of attention to Cactus,
and grow more and more that they must
be studied in the field and with an numerous
specimens in different conditions.

Yours truly

J. Lewis Macadam

Two revelations about Oaks from Asia, but
two uncertain yet to formulate.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Oct 25 1881

Dear Sir

[illegible]

Yours very truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., [illegible] 6 1881

Dear Mr Rhabson

As you keep count of names and synonyms you will probably have noticed that Prof Planchon has (where? in Bulletin) indicated a new species of Vitis V. Berlandieri which is not unlikely to be V. smaritorum, Buckley; he says positively that for Buckley's orig. and Durand's orig. it must be something else "with large greenish berries". That is so, but Berlandier, Buckley and Durand species are all the same and for some time the position of the fruit can not decide Buckley's name as a good one. Planchon describes and figures new species, Vitis champini, which I do not know, probably [illegible] these fruits can give a heap of trouble about Vitis. You have noticed the [illegible] Tuberculosis Vitis of Devaux for Tropical Africa, which would be well in France! Planchon himself has settled that name, and showed the absurdity: a tropical Cissus with tuberous roots (like our V. vinifera!) "V. solonis" [illegible] of [illegible] publications in France. Leaders gobbledegs that name in my herbarium. It is a Vitis species with scarcely

[illegible] but [illegible] Smith [illegible]
[illegible] of [illegible]
[illegible]
[illegible] name came from.
They pretend now in France that it is a
distinct species, very [illegible].

— I just got another number of the monthly; La Ligue Américaine, vol 4. p. 316 Oct 1880 where this Ulex Berlandieri Planchon is described; he has seen "Berlandieri" no. 2410 & 3116 and Wright, N. Mex. The latter must be my V. Arizonica, for I do not know that W. ever got monticola or anything like it. One of Berlandiers is what I have always taken for monticola. What they cultivate in France under that name is something else (Berlandieri?) and probably several things.

When do you expect Gray?

Several new Junci from Oregon & California and new Euphorbia from Florida.

I am working out Isoetes now for publication.

Yours truly,

G. Engelmann

[illegible] ?

having similar counterpart and Coxy stalks in genuine native!

But enough! [illegible] news from you [illegible] most kindly [illegible] Gray

Yours, truly

S. Sargent.

How they got in the garden [illegible] Cantaracus I have not [illegible] Prof Sargent?

St Louis Nov 18 1881

Dear Gray

So you are at home again and begin to get settled down and will soon give us the results of your European researches!

Your letter from Kew reached me in Manitou Springs. Thanks for it.

You speak of my coming over this fall. That must be a misunderstanding. I never intended to go to Europe in this fall — perhaps next year — perhaps not. I am so unsettled now!

After Coxy sickness in spring I went as you know to Colorado where I had a pleasant time, but perhaps not very satisfactory in botanical results. Then I went down to New Mexico where I was much pleased to find [illegible] of [illegible] first introduced by Fendler and Wislizenus, and by the middle of September I returned home. I had with me [illegible] from Frankfort who proved an excellent travelling companion. We were here scarcely a week, before George [illegible] his wife, [illegible] spent the "heated" term near Cape Cod — returned, since he was taken

sick with some typhoid malarial complaint which brought him to the verge of the grave, so that we telegraphed his family and have now his brother here to help nursing him. Our patient is better but makes a very slow convalescence and is still in bed. It was a month of great anxiety & trouble for me and all of us, which threw me back considerably in my work.

You said that the far west species of cactus are giving you much trouble. I have engaged Parry and Greene who are both yet in or near San Francisco to supply you with material and I will pick out and send you what I have.

Did you find Schultz's Compositae? They must be in Boston or St Petersburg.

I have nothing to add to what I said about Campanulas in my last letter, unless it is that the new species (C. Camp. palmeriflora) usually taken for C. exaltata keeps very nearly to the same elevation, about 8000 feet, in grassy spots, all over Colorado, and that besides other characters, it is well distinguished by the long filiform rootstock, and stolons, while C. exaltata has a stout lignescent rootstock, just like my C. scabrella. If check you will see a specimen in your herb.

My botanical work has been, as I said, very poor and scattered, since I return. I have Cuscuta, I have scarcely touched; Sagittaria I have looked over again and mean to describe one or two new Texan species, for nearly allied to S. graminea. Isoetes I have taken in hand again and am publishing now; Cupressus I have begun to study, stimulated by the Arizona discoveries of 2 species! One of them is the new C. erythrophloea, the other Greene's name (arizonica). But how distinguish and describe species is still a question! Some new Euphorbias and new Juncus have also turned up.

Thus you see I am not idle, but dabble and nibble a little here and there without serious work.

My patients are few & far between; I am taking up that part of my occupation.

(By the way, Cryptotaenia is a nice species and a true biennial of which I will send you specimens, as also of some other nice things, e.g. Quercus gambelia, which with prunus is a distinct species running in West Texas, geographically together with Q. virens! and being confounded with it!

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Oct 22 1881

Dear Mr Watson

Have you a ~~Arenaria~~ Stellaria closely allied to crispa, from Colorado? I have such a new species, but should like to know whether only new to me; among other characters it is distinguished by obtuse sepals, by seeds etc.

I should like to compare Pinus (Sabiana) sambucifolia from Oregon, a few flowers and a few (or one) berry, as I have an apparently distinct form to describe.

I have been at work on Cupressus for a month and find it hardest work, yours as well as the foreign ones. I have excellent material, cultivated and native, but find it really very unsatisfactory.

What have you done in that line?

And now come Greene and Lemmon and clamor about names and naming before we yet know exactly what to name!

More Juncus and Euphorbia come in

yours truly

G Engelmann

Will answer a recent letter from Dr Gray soon.

with his brother, and I hope that there he will entirely recuperate, and be able to go home in March or April; if late enough for vegetation to show I may pay them a visit, and return by way of Cambridge & Boston.

I hope that your winter is as mild and nice as we have it here and that Mrs Gray will be benefited (or at the worst, not injured) by it; it can of course, not be as pleasant as your winter in Spain must have been. Remember me kindly to her

Yours, ever

G. Engelmann

I have made out a long known but long doubted species here as Oratrophus arborescens, so that some, into your territory, will send you seeds.

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Dec 24 1881

Dear Gray—

Thanks for your kind letter. So you have your troubles with aspiring botanists! It is a state of things, which will come sooner or later, and is certainly unpleasant enough—, and will make a good deal of annoying labor. You are perhaps correct in ignoring the whole thing and in sticking to your legitimate work. Let them do their best or their worst, as the case may be.

Kellogg worked in that way for many years, Greene is doing better, and now Lemmon and others follow. At the same time that nice plaything, the microscope, induces some to favor the admiring mass with their discoveries of new fungi. Notoriety is at the bottom of all that, formerly they were satisfied by collecting new plants and by having their names ~~attached~~ given to genera and species, now they want to see their names as authors,

to emulate Kellogg's fame!

But let me tell you, that you are somewhat to blame; for this clause after botanical nationality, as you "to encourage aspiring collectors" stick their name to innumerable new species, and their is no end to Wrightii, Parryi, Lemmonii etc etc. Let us resolve to use always a descriptive name, where it can be done, give a geographical, where another is not applicable and personal names as a last resort.

An amusing claim ~~on~~ me came the other day from Mrs Dr Lemmon through Dr Parry, to name that Cypress for her husband; I had not named any plant yet Lemmonii and ought to reward his great exertions, dangers of life and health etc. Now, I have never yet described a Plant of Lemmon's, and moreover, I had the Cypress through two Collectors before Lemmon got it, and if it is identical with Greene's, which is probable, then there were three before him, and as Greene writes me that he has sent it out to all great Herbaria as C. Arizonica Greene n.sp. I suppose that name will have to be recognized. But enough of these miseries, or you will think, that I am not better than the others!

It is amusing to see the State Pride cropping out in these western botanists, they seem to want their flora for themselves! And still, there is something in it, if they can only do it well.

But it seems to me that you misunderstand Lemmon. You seem to think that "he is setting to work to intercept the plants which naturally come to us" or Lemmon only wants to describe and name himself some of this plants; Greene's claim if Lemmon reports him correctly, is absurd (i.e. to have a right to a plant, if he puts his "n.sp" on it)

I suppose you suggest to Lemmon the propriety of suggesting names for his supposed new things, which he may send, with the liberty of your not adopting them, if you do not think them proper – a thing which you and others have often done before.

But again, enough!

My nephew has been slowly getting better, but I dare not send him across the ocean at this season and so have directed him south, to Aiken S C

GEO. ENGELMANN, M. D.
3003 Locust Street, St Louis, Mo.

Dear Sir: St Louis 1882

Lemmonias Cratoni is C. conjunctus, Engl. Bot. Check
= Lindheimeriana: Torr & Mull. are Schedule
two Cratoni of Pringle's must be 1 a large, broad leaved form
of C. Texensis and 2, probably C. gracilis, which I do not
have and can not compare.
I have a Cratoni from San Diego Harbor, Palmer 1875, which
is probably your texanus, but rather erect.
I send new Euphorbia from Pringle! and several
new Florida ones of the Amorphella tribe.

I have not Cratoni Ellisiani, Bradbury, humilis, Carpathy
— Has C. virens (Wright's) really naked stamens? I have only a
female specimen
Pringle has also found Potrophis acquatic, Dry
and Meristot angustifolia

G. Engelmann

NOTHING BUT THE ADDRESS CAN BE PLACED ON THIS SIDE.

S Watson
Bot Garden
Cambridge
Mass

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 9th 1882

Dear Gray

By a heroic, almost superhuman effort I have today picked out and packed, overcoming my growing laziness, the Astas, Solidagos, and a few other things for you and also a good set of the Cultivated Cypresses.

The Compositæ are partly numbered and I shall like you, when you are through with them to give me the names of the numbers.

Those not numbered I have sent you all I have; at first I marked them "return" but left that off afterwards thinking they would be better in your standard Herbarium than in mine, if there is anything among them worth while to keep. I know that there is a number of common species, but I thought best to send all from the west.

Now I must get my western Gray out for Thurber, who wants to go at them, and then at my other work. Practice is getting beautifully less and I feel as if I am doing nothing, as if plants did not fully occupy me.

I have sent my patient South and have some idea of following him in early spring and returning by way of Cambridge — but you will be too wintry in April yet, I fear.

Yours ever

J. Engelmann

Asa Gray

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 16 1882

Dear Gray

There is certainly not much to distinguish Pringles Euphorbia from Douglasii but looking again and again at the little thing, I can not make up my mind, to unite it with it! The habit is so different and I should certainly after comparing all my specimens from Colorado and Utah with Oregon come to the conclusion that it is distinct and that the name of E. medioxalis would just express that difference. The calyx is also shorter than I usually find it in Douglasii, though the flower is rather larger, lobes wider; the seeds are decidedly smaller (0.25 mm.) though of same surface making broad rosette of radical leaves, very few and small stem leaves, very long peduncles.

I just got your letter; I like your plan but have nothing at this moment; have that I had sent to the Gazette, a reprint of which I have sent you this morning. However I could soon arrange a lot of new Euphorbias, but at this moment all my time must be given to finishing my Isoetes paper, which is partly already in print. I forgot to enclose in the Cupressus package specimens

of our lately recognized Centrogyns arborescens which I had known long, but never identified; it will come some other time.

The great work before me will be the revision of our Calocera and description of a number of new species; but all that will take time, and you know that I am a slow worker.

So we are going to get the Planorbes in abundance; Woods in is already out — Gentiana will follow.

What work is that of Micheli on Hepaticae of which I hear, and which I should have — if Buchanan writes me of a Critique of his to be published soon in Englis's journal.

Well if my Sorbus obtusa is a ~~[illegible]~~ Scandicifolia, then Americans must also occur in Oregon.

Yes, Pringle made the same impression on me as a sensible trustworthy man; Greene did the rather strange things with his collections, and the way he treated Lemmon is not better, laying an embargo on every thing, which he off hand pronounced new, a sort of mormon-like sealing on.

Thanks for your kind invitation; I hope I can realize this vision of SE and NE trip — but then — there will be again time lost — of that little that maybe left, to work in! — I must say that I do not like your frequent allusion to the short time allotted us — it looks as if you were already feeling the approach of the end — and that can not be. — Latin diagnoses suit me better than English; I shall not fail to help you, but must have time!

Thanks to Colson for the fragments of Carex, I now see that Pringle's is not gracilis; something new?

Yours truly
S. Calkins

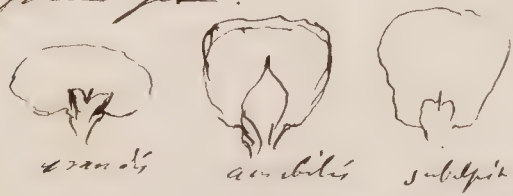
GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 20 1882

Dear Mr Watson

Here comes Lily. alpinum, which I share with you, having only two specimens — and the share of Hellaria obtusa is still more complete; I had only fragments in a letter! I also send good specimens of Campanula planiflora with rootstocks — I find

Now about your Abies from Bitter root Mountains. I was reluctant to call it subalpina on account of the peripheral ducts of the leaves, and I believe it is not; probably grandis — but you would not undertake to name other plants from a sterile side shoot and here comes the difficulty. The scales can not belong to the same, or they indicate greater variation than I have found yet.



In your specimen the bracts are those of grandis, obcordate, but the shape of the scales is high like that of subalpina, and narrow. The bracts in subalpina and grandis are often similar, but in amabilis they are very different. Besides that, the crowded leaves in amabilis are characteristic, while

in your specimen the leaves are distinct and not crowded at all.

You may call it grandis, but I would doubt very much, whether the scales can be referred to that species.

I send scales of all three species.

Yours truly

J. Lapham

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 23 1872

I get today a Polygonum from Arcadia, which I had 32 years ago from Lindheimer and think I must have communicated it to Prof Gray. I had then named it P. Texanum. I do not find it in DC Prod. Sheaths naked, no glands on peduncle, styles 2 stamens 5–6; something intermediate between Persicaria and mite, adpressed, without ochrea or sheaths. Do you know it? Where can it be? — I have put every thing else aside and am finishing Isoetes first of all. —

Yours truly

G E

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

S. Watson Esq.

Bot Garden

Cambridge

Mass

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Feb. 3 1882.

Dear Mr. Watson

Your Stellaria fragment. are without fruit and seed, but from the form of the leaves and the sepals I have scarcely a doubt but that it is identical with my plant.

In regard to the Eriogonum you are not quite correct; alpinum and Lobii are very similar in foliage, but otherwise distinct. E. alpinum has short erect teeth of involucr, Lobii long reflexed ones; a. yellow, L. with rose colored flowers; a. long-attenuated or stiped, L. sessile flowers, a. carpeness; a. scarcely hairy filiform filaments, L. broad subulate woolly ones — not to say anything about the inflorescence, which may vary according to circumstances, but my specimens of E. alpinum have all simple heads. I only regret that I have used such a trivial name as alpinum and not named it e.g. laurochrysum or lutea-album. —

About your Abies not much can be said; the cone scales to me certainly point to subalpina, but you can judge for yourself. If you have not good specimens of the scales of the different Abies I can see. I get specimens

but am under the impression that I have done so already. — The foliage is that of a stinted grandis, though we could hardly expect it so far inland; but then, that other coast species, Picea Menziesii does certainly occur also inland, as you have found, and also climbs high Mountains as we saw on Rogue River. Only Picea Sitchensis sticks to the Low lands and tide-waters, whence justly called Tide water Spruce.

Yours truly

J. Engelmann.

I believe I asked Prof Gray whether he knows any thing about a recent publication of Michelis on Abies nobilis which Buchenan mentioned to me as containing things clashing with my views — I do not know what it is, and should like to see it.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Febr 3d 1882

Dear Gray

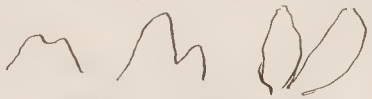
I just get a pamphlet from Eichler on the female flowers of Coniferae. I have read it but have not made my mind up yet; I must say, however, that it always went against me to consider the male "ament" a single flower while the female was to be an "ament" composed of many flowers; but it could not be otherwise as long as we considered the capillary scale as a (single or compound) axillary organ.

Now here comes Eichler (after Sachs) and takes the bold stand that that "ament" is also a single flower. He thinks that the scale is a foliaceous appendage or dedoublement of the bract often on the middle or upper part of the bract, in Abietineae from its base. The reversion of the order of vessels, he says, occurs in all such appendages. The scale is to him the exact counterpart of the anther scale (we have seen an anther bearing bract scale in your & I's sense more and while this bears (in Abietineae) the pollen sacs on its back, it bears the ovules on its ventral or upper side either direct or on that secondary blade or ligula or in the axil as in Cupressineae.

I suppose he has sent it to you also and you will look it over and see his plates & figures. As I said, I can not yet make my mind up, though the analogy with the male flower and thus the simplicity is seducing.

I was astonished to see here that Abietineae

are not older than the cretaceous, while I was under the impression that they occurred already in the Carboniferous period.

The fact that in anthokysis the abietineous "ovule" is apt to divide into two organs, which others have seen and I have verified myself in Tsuga is rather slurred over by Eichler, saying it must have occurred through pressure of the viviparous branch, which is an axillary product of the scale or bract; but my Tsuga divided in different degrees  without any new axis or other thing to press. He seems to make light of the value of teratological changes, without saying so in so many words.

I had written the above several days ago when I got today your letter of Jan 30

As to Mss of Euphorbiae, I have only a few memoranda, but can soon I suppose put them together. I find that my working powers are not what they were. I am now a little more engaged professionally than in the beginning of the winter, and find that when I have been out much, I am not good for much the rest of the day, especially in the evenings, which were my best time to work in botany formerly.

Yours Truly

J. Engelm

a propos Bongard with your and Watson's Synopses I ought to have a pretty good knowledge of the field. I enclose you a letter to Watson written a week ago, treating on that question

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Febry 9 1882

Dear W. Some 3 or 4 years ago I sent to Baker a description of Woodes Cedarea at his request, I think for the work on ferns edited by Hooker and Baker. Do you know whether the species is published and how to be quoted? I have never heard of it since. I have not yet published any thing about it yet

Yours G E

POSTAL CARD

ST. LOUIS STATION
FEB 9
1 PM
W. C.

U.S. POSTAGE

WRITE THE ADDRESS ON THIS SIDE—THE MESSAGE ON THE OTHER

S. Watson Esq
Herbarium
Cambridge
Mass

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Febr 17 1882

Dear Sir

Your Scirpus from Oregon is unfortunately immature; at all events it is not S. Nuttallii, the only species then far known from Oregon. I wish you could get me a specimen with mature spores; the specimen you sent has some peculiarities so that one might suspect an undescribed species.

Yes, one of the Cactus plants that my old friend Lindheimer collected, was this A. tripolistum, in the entrance to a limestone cave on its perpendicular walls, not far from New Braunfels, and I enclose you a bit of one of the lateral lobes, as I have no specimen to spare.

Thanks for your Catalogue.

The ground is larger and rather thinner than my Cuba and Venezuela specimens, owing probably to it growing in a cave

Yours truly

Geo. Engelmann

Among a small set of plants from Mississippi I find Polypodium incanum Osmunda Cinnamomea and Adiantum Capillus.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., March 24 1882

Dear Gray

Your postal came today — glad you sent the Eichler matter to the Journal, though I fear from what you said before, that it will not appear in the April number. And I wish it had, as I got yesterday a letter from Eichler in which he proposes that I should translate both his articles for this country. I answered at once that I had already extracted them, which I thought, was all that our botanists cared for and that moreover I was not entirely convinced, though his investigations and his reasoning were both instructive and suggestive.

Letterman brought a week ago a lot of flowering Leavenworthia — fresh. It is our Missouri and Arkansas (and probably Texas) plant and seems to unite aurea & Michauxii. We will have fruit and seed by and by. At present I can say that the calyx has a dull purplish or brown green, the petals are pure white with a greenish yellowish tinge at the claws and the whole petal fades pale dirty yellowish before falling off. Nothing like the good

yellow of Gattinger's specimens. Style short but conspicuous as I figured it 45 years ago. I suppose it is Michauxii and aurea combined, but we shall see. I include a small specimen — have more for you.

I have several Amorphophyllum Euphorbias described for you, but getting at the perennial Eculas I am stumped, find them really very intricate and it will take me a few days to see my way through, when I will send — Also a new Pine, coll by Palmer in North Mexico 1880; Sargent sent it; I suppose you have a specimen. It is not only undescribed but in every way very curious.

With spring advancing I begin to feel reviving myself and may after all go to see my nephew in Aiken and then with him northeast in April — rheumatism permitting!

Yours truly

S. Lang Sullivan

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., April 11 1882

Dear Mr Watson

Why did I not answer your of March 26th at once? The roses made a difficulty, but you sent a nut to crack, which did a little with but have not satisfied myself about yet: that Arcanthobium. It belongs to the sect. which perhaps wrongly and prematurely I have classed with A. Douglasii i.e. small yellowish species with somewhat persistent female stems, which bears flowers from old axils behind the fruit. When I have more time or I should say when I feel more like it, I will go over the whole ground again. I have such forms also from Pinus monticola and P. flexilis. They all differ a little, but perhaps not enough, to make species of—

No, I have no time, patience or knowledge to study roses; it requires a careful study in the field. What you can make out in the herbarium must always be unsatisfactory; so I do not have any ambition to undertake it and

gladly leave it to you. If you will take them and will send you my material, if you wish.

Cirsium conjunctum is a most variable thing. I had specimens from West Texas the other day with very large broad oval leaves and only with female flowers; whether purely male ones belong to it I do not know. C. Lindheimeri has seeds quite different from capitatum, but if distinct, the name is now preoccupied.

You did me wrong in putting Menzelia pumila and chrysanthe together. I have found fine pumila in Colorado with seeds and leaves (attenuated into a petiole) as described — have laid aside a specimen for you.

That Polygonum Lemmonii is a good species and ought to be published.

In my Scottsbluff paper are some miserable errata; the most annoying is that 3 times J. melanopoda stands for melanosporum — probably wrongly written by me p. 368 l. 17 & 27 from top and 373 l. 19 from bottom.

Tell Dr Gray that I have never seen Polygonum Howellii, which is common here in that way — will see that Eggert collects good specimens this summer, can send a head or so 45 years old, if he wants some.

Yours truly
S Watson

St Louis April 30 '82

Dear Mr Wilson

I had written the other page some time ago. I suppose you have too much to do to trouble yourself now about that oak, and we must wait for further developement.

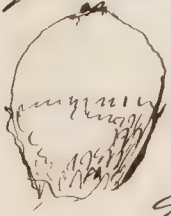
I have now looked over all my roses, and put them in some kind of order — such as it is, and can send them whenever you want them. I shall send all of it, rare and common, and all the duplicates, from which you can pick and keep for Cambridge Herbarium whatever you want.

Parry sends a beautiful new rose from Lower California; possibly got the same, if so, most recently ambitious, will probably publish it at once.

Yours truly

S Engelmann

So much for the imperfection of and want of satisfaction from hasty notes: when 6 years ago I had from Dr Gray the whole collection of Brewer's acorns I made a note and sketch of one which now becomes interesting because it seems to represent Rob Brown's (minor) Q. Sadleriana (Ann & Mag of Nat Hist. April 1870.) which I had ignored, because I could not make any thing of it — and Brewer's note I had also ~~lost~~ said



the memor. says: Low bush, 3-6 feet high Siskiyou Mountains (also the locality of Sadleriana) Oct 1863. — "much like Q. dumosa" ~~with~~ these last words are Brewer's or mine, ~~Not sure which~~; ~~if mine I need have seen the Leaves, and you must have them~~

I have written to Prof Sargent about it but don't know whether he will have interest or patience to root up the acorn!

In that region bushy Q. Garryana is common — but such a leaf can hardly belong to Garryana.

Could you find the specimen?

After writing the above I find further notes, which leave the matter hopeless and unnecessary for you to further trouble yourself. It seems that Brewer himself compared the plant to dumosa, but gathered nothing but acorns, which, or ~~the~~ rather the cup, are curious enough. It is certainly allied to Garryana but seems different enough. Did Brewer get foliage, which I never saw?

Pseudophoenix, Nov. Gen. Hrm. Wendl. Gaussiae affinis.

Fructus stipitatus drupaceus cuneiformis aurantiacus, e carpellis 1–3 globosis stigmatum residuis basilaribus vel in fructibus lobatis lateralibus vel centralibus, epicarpio coriaceo, mesocarpio gruemoso, endocarpio tenuiter vitreo-crustaceo. Semen liberum subglobosum erectum, hilo basilari, raphe adscendente utrinque ramis 2–3 manifestis ovoatis, albumine aequabili; embryo basilaris.

Fl. ☿ in fructu: Calyx parvus pateriformis leviter 3-denticulatus. Petala 3 ovata obtusa viridia reflecta. Staminodia 6 manifesta apice atropurpurea.

— Palma mediocris, erecta, foliis pinnatisectis, segmentis duriusculis ima basi valde implicatis.

Species 1. P. Sargenti Hrm. Wendl. Elliotts Key. Florida.

fern.

seems to have experimented with it; it would be about time to settle this question; popular belief is so very doubtful and unreliable.

Gwin the enclosed seeds of Agave Wislizeni and Agave heteracantha, our recognition to the Gardener; both from West Texas.

Thanks to Wilson for the acorn, which I will return; without leaves we are left in doubt.

I will send the Roses whenever he will work them up; otherwise I prefer to keep them here.

Weather cool, health good, no inclination to travel, neither east nor west!

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., May 22 1882

Dear Gray

And here comes an extensive paper by Celakovsky, which you no doubt have also got, to say a last and last word about the carpellary scale. On the whole I am pleased with it as far as I have been able to examine it. It explains away Eichler's explanations, goes back to Mohl's views of the Sorado-pitys. The character of the Carpellary scale of Abietineae and is thus far quite satisfactory but why in heaven's name he makes the (small) scale of Araucaria different from the large scale of Abielineae, and grants to Eichler that it is merely a lobe, an "emergence" of the bract and that here the bract is the real carpel, I can not understand may be that I will learn it by more thoroughly studying the paper!

He is cautious not to commit himself about Cupressineae "until monstrosities have been found, which may explain the case"

but at the same time he ridicules Eichler's explanation of the thickness of the carpellary Cupressus scale and does not understand the reversion of the vascular bundles. He is non committal on Cupressus these.

You see on the last pages a resumé the essential part is No 9. page 59. the so called cones of conifers are single flowers (Araucaria & Podocarp) [= Eichler] or spicate inflorescences (Abietinae Taxaceae, Cephalotaxus) [Cupressinae are here left out! or included in Araucarieae]

At the end he says, that it is satisfactory to find that after 60 years we come back essentially to Rob Brown,

It seems to me that the essential discovery of R Brown, the Gymnosperms is now and has long been well settled notwithstanding a few, the Patatoes — but that the question now is about the carpel!

Why did I not get extras of my paper on Eichler from Silliman. Journ? I should have liked to send to Eichler and a few others, and to preserve it myself. It is quite a disappointment.

page 419 4th line from bottom it ought to read <u>their</u> for <u>this</u>, which is nonsense.

I see that Celakovsky assumes 3 groups of Conifers: 1, Araucarieae (including Taxodineae & Cupressineae) 2, Abietineae and 3, Taxodineae. It seems to me that Cupressineae with their opposite leaves are a coordinate tribe with the other 3

I have from Parry and Jones a new Rose and a new Cereus, and another Cereus from Parry. You know the difficulty about Jones but I hate to mix with it by publishing any thing myself. now the rose is a beauty.

I want trouble your composite brain with beautiful morphological Agave discoveries etc, etc; but may send you yet a lot of Compositae. You have our New Berlin Mussouriensis I believe.

But I must enclose a rough bit of an Astragalus from New Mexico; can it be a canescent form of Mexicanus? flowers pale yellow the ivory is quite glabrous; fruit unknown. It was sent to me as a rotten "Loco" (Crazy plant) which kills mules etc. I had told you a few weeks ago that Astragalus diphysus was sent to me as such, and Oxytropis Lambertii is crazy "known" as such. But nobody

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 6 1882

Dear Mr Watson

You did well to send the Cacti without previous enquiry whether agreable. It was a stroke of diplomacy. I would have said: no, I do not know Mexican Cacti and have no means to identify them from the wretched descriptions.

Now they are here I can not help to take some interest in the poor miserable outcasts, and will do what I can. But Palmer is outrageous, his notes are almost worthless descriptions of colour of flowers, nothing about shape and size of the plant, ribs etc etc. It is disgusting!

Do I understand you right, that the numbered ones are plenty, for distribution, so that I can take what I want, but that the unnumbered ones are all that you have of them, and I must be discreet in sharing with you.

Where is Palmer now?

Offhand I can name for you

only the following numbered ones

378 Mammillaria conoidea DC. unfortunately no seed
N/a M. ? microrhaphis Lag. Bot Bord.
? M radians DC

375 Echinocactus pilosus Galeotti (glad to get seeds)
374. 373 Echinocactus longihamatus Galeotti
380 Ech. horizonthalonius Lemaire
376 Opuntia Kleiniae DC ?
377 Op. subrioata Haw ?

368–72 are Cer. subgen. Echinocereus
probably only 2 species, one of
which must be Cer. cinerascens DC

There is a number of unnumbered
Mammillariae of much interest but
all unknown to me.

yours truly

G Engelmann

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 13 1882

Dear Mr Watson

Some time ago Mr Sargent sent me a list of Palmer's collection which I find to be new and very interesting. I had drawn up a description and as I now learn from you that you are publishing his plants, I send you what I had written.

Some correspondent sends from Northern New York the enclosed plant — from sphagnous swamps — had never seen it flower. Do you or Gray know what it can be? A Scutellaria? The lowest leaves forming a sort of scaly bulb.

Yours truly

G Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 26th 1882

~~Dear~~ Mr Watson

Examining your Mexican Cacti it strikes me that it would be some help — I do not know, how useful or reliable — to know what Hemsley has done with Parry & Palmers Catalogue of 1878 &c. Can you tell me? What are e.g. the two Echinocereus No 277 & 278. and what are all the other Cacti?

This was written several days ago. I have since taken kindly to the work and have not only made out the above plants, to be 277. Cereus cinerascens DC and 278 Cereus acifer otto, but have come to the conclusion that the first named species includes all Palmers Echinocerei (except perhaps No 368 which I would call Cer. ein?) 369–372 are undoubtedly C. cinerascens DC and forms in part with larger spines than any described. My C. stramineus seems the same

377 Opuntia imbricata DC (Cereus Thw)
379 most probably Echinocactus bicolor galeotti
376 Opuntia Kleiniae DC?

These are, I believe, all the numbered ones. The unnumbered Mamillarias

I can not now make out.

By Parry's with I have described a Lower California Rose, (so as not to let it fall into the hands of the rapacious and unscrupulous Jones) as Rosa minutifolia.

July 19'

Dear W this was written several weeks ago, and as I was writing to Prof Gray to-day this may go along

Parish sends nice things, also some Spheroe, which have brought up the whole genus again. I can not agree with you, except so far as to E Nevadensis which is not at all in Texas, and very distinct; — pedunculata E. ned is antisyphilitica Stake to be distinct; and also my variabilis, with 2 and 3 leaves. When I come east we may look over them together.

Yours truly

S Lyman

Eph. trifoliata
comes into the Californ
Desert (Parry)

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., July 19 1882

Dear Gray

I send you here a review or rather a report on Calakowsky's Compositions publication. If you think proper you give it to Sill. Journ. If they print it please see that you and I get some extras; 6 or 8 are enough for me.

I have two unanswered letters from you. First my thanks for your kind invitation to Cambridge and Montreal. The first I will probably accept. The latter I do not care much about. But for the present I am not only well enough here, but have also a good deal of work before me, which I should like to finish. A paper on vitis is the first; next is the distribution of my conference and queries, which I should like to get rid off. But if it should get too hot, I shall probably run of at once and divide my time between Cambridge and Brookline.

Thanks for the Compositions paper. What a work it is, to clear up

those Astys etc, and still not satisfactory.

That "Lord" can not be Astragalus Bigelovii or mollissimus, for it has glabrous ovary, narrower leaves etc.

I suppose Sargent consulted you about restoring old names of genera, e.g. Urgini am Mill for vireos and other like things. I could not advise it, and referred him to you.

Yes, George and wife left 5 weeks ago and I am quite alone — had an excellent passage of 9 days over a sea as smooth as a mirror, will be back Octbr 1st. He went to Vienna to study. His going is rather a reason for me to stay and attend to house and patients; but I will go soon, though weather and health are excellent now.

Mrs Metternich has published a life of her father, Braun. To me very interesting, for others probably a little too full of detail and too voluminous. Pity that a man like Braun who might have done much more should have been hampered by official business of University and Garden so that a great deal which he began was never elaborated — no time for it. And he was thus kept chained down to his death, at 72 years of age.

Yours ever

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., July 26 1882

Dear Gray

your card in this morning; thanks but I don't like to carry my rubbish thousands of miles and then bother you with it. If I find that I can not distribute the duplicates before leaving I shall defer it till my return.

I send the enclose for Chapman to you as you are more apt to know where to find him.

I have not seen real Vitis Caribaea from Florida, though it is given in Chapman's Flora — and don't think you have it in Herb. but Curtiss' plant is the genuine stuff.

Why has nobody (which means you!) told me of Oersted' paper on Cuba (1867) when I was

working up oaks? It would have saved repetition and synonyms. This Erythrobalanos is my Melano balanos. The work (Danish!) was sent to me the other day.

It is getting warmer but still under 90° and very comfortable. George is Berlin, going to Vienna.

How the Egyptian affairs must interest you — having known the country yourself.

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Brookline

St. Louis, Mo., Sept 5 1882

Dear Gray

here I am on the point of going westward, and it grieves me greatly that I could not see you again. Sargent took me over to Cambridge yesterday but we found neither you nor Mr Watson, who happened to be out. I am glad you took a longer vacation than first intended and hope you and Mrs Gray had a good time; the weather at least must have been delicious. We have not heard much of the meeting, except what the papers brought, and have seen only Dr Mohr of Mobile, who in returning spent a day here.

Your letter arrived here in good time but I felt a little discouraged to undertake the trip to Quebec with the possibility of missing you being over fatigued or else disappointed. So I stayed here, where there was and is a good deal for me to do in studying oaks and pines and especially

those beautiful wood collections. Wood characters will, I suppose, eventually become as essential as leaf and flower characters, especially in plants, like oaks, where the latter show so little.

Prof Sargent is going to St Paul and the Northwest and I shall go with him as far as Chicago, whence I will visit my brother at Lasalle and spend a few days with Perry at Davenport, when my time will be up, and I must prepare ~~the~~ home to receive my son and daughter. If it was not for Perry I would probably have gone home by way of Philadelphia and New York.

I am sorry now that I did not come east a few weeks earlier and had a longer time with you and Sargent and perhaps elsewhere. Well, perhaps another time.

For Mr Watson I left on his table a Rosa lucida from rocky top of the Blue hills which may as well be carolina, just as my specimens from Narragansett Pier. How are they distinct? Quercus prinoides was abundant there as also in Boxford where I was a week ago. And now good by, and many thanks and the best wishes for you and the Prof

yours ever
G Lyman

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., Sept 26 1882

Dear Gray

Since a week I am at home again and am gradually getting in working trim. In a professional point very little is doing and it seems as I would be slowly retired!

I got your letter and photos of the Agave, but have not yet found leisure or animus to write the matter out. Will do it soon and send it to you to forward together with the photos to Dr Masters.

Perry, with whom I was a few days, is now on his way to California.

While at my Cousins your letter to him came. In answer I will say, that not knowing how you would like the wine I ordered for you only one 5 gallon keg of the red wine (Claret if you will call it so, or Bourgundy — here it is generally called

(V. aestivalis)
Norton's or Seedling) the price of which is $5.— for the wine and 75 c the Keg. which I have laid out for you.

The other Keg contains a light Concord (Labrusca) scarcely pressed and therefore not red nor a "foxy", though it can scarcely be called a "white" wine. I send that as a present for you to try it. It is only 75 c the Gill.

It is necessary to get used to these wines as at first they have a rather strange taste. We like them, especially the Norton, best with water. The latter is also used pure as an astringent with advantage; it has the strong colouring matter of which the French are so fond.

George is in Boston, but will scarcely find time to run away from his gynaecological Colleagues to go and see you; Emily, afraid of the crowd and turmoil of such a congress stayed in New York. I expect them Saturday.

I hope you and Mrs Gray enjoyed yourself on the St Lawrence

What are these two asters, the smoother one is from the Sand Dunes of Lake Michigan; the other is a very common late one (now in fl.) which I had always taken for A. Novae-Angliae

Yours truly
G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Octob 3 1882

Dear Mr Watson

I am loth to put more labor on you, but as you at this moment have charge of my roses I can not help it.

I must beg you to pick out the following specimens for Mr F. Crépin, Bot Garden, Brüssels

✓ Rosa minutifolia, I think in the Californian bundle, a flowering specimen and a fragment of the stock shoot

The following you will find all in the Rocky Mountain bundle

✓ R arcularis with long fruit Twin Lakes in pinewoods
✓ R. " " short " " " "
✓ R. " ? Engelmann Canon stock branches and fruiting specimens — several.
✓ R ? Bishops Garden Santa Fe
✓ R blanda ? Manitou, along the Fontaine qui Bouit.
I think there are several of this.

I am hardly warm at home, harassed by patients, and not doing much in botany have not even labeled my specimens, brought home from Cambridge etc.

My son and wife have come home a few days ago, and order will I hope

soon be established.

Crépin writes me that in one of the next numbers of his primitiae he will work over the American Roses and wants whatever material he can obtain. After that he will probably go at once at the Monography proper.

I think I will send you labels for the Roses for Crépin, so that you will find it a little easier work.

In the Arboretum I found a fine specimen of Rosa arkansana raised from my Colorado seeds (1874) and the true alpine form with single flowers and elongated peaduncles fruiting so, it came true from seed; but the fruit form varies excessively in the wild plant.

You ought to return me the description of Rubus latisquamus, to publish in one of the journals as you do not seem to get at it, or perhaps send it to Hemsley, to whom Parry send any notes on Mexican Phanerogams 3 years ago!

Yours truly

G Engelmann

A letter from Dr Gray crossed with one from me.

Sent to Crépin by mail — Oct. 11/82

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Octob 25 1882

Dear Mr Watson

I send with this an article for the Gard. Chron to Dr Gray who will have the kindness to enclose the Photographs of Agave Ut. Reg. I have also furnished a description of your Agave bracteosa and would ask you to send along the sketch of the whole plant and of the pair of flowers which you have shown me. They are sufficiently correct I think to be laid before the readers of the G. Chron. in wood-cuts. If you chose you may read my description and alter any thing you may find necessary to.

Thanks for the trouble you took in sending the Roses to Crepin. I have also sent him ripe seed of the new Rose which I believe the Cambridge Garden has also, direct from Parry.

You say you send the Roses to Crépin by mail. How do you do that? I was informed

that only small packages 4 by 8 inches, and not more than 2 inches thick and not weighing more than 8 ounces could be sent to Europe. If that is so, how could you wedge the Roses in so small a compass?

Yours truly

G. Engelmann

for Mr Watson

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., October 25 1882

Dear Gray

Here is at last the manuscript on the Agaves for Dr Masters. Now, if you add the Photography and Watson his sketch of Agave bracteosa every thing will be right and we can dismiss this matter. I have also written to Dr Masters. Conifers are, it seems, getting out of fashion, they are lately scarcely ever alluded to in Gardeners Chronicle.—

Thanks for your kind invitation to spend the winter with you. There would be many inducements, the principal one yourself, but the climate is certainly not one! If our winters are sometimes very cold, the weather is usually bracing and clear; but the principal cause for my staying here is that I have my home and my business here a little professional and a good deal in my herbarium. I know very well, that, alone, I lack the stimulus which the association with other workers gives.

I was sorry not to meet you once more after your return from Montreal — I wanted to talk with you also about that new black finished Cabbage

which I have found in your Herb. also from Drummond (I have marked on the specimen the name of C. brevipes). You will find a description and character of the 3 Clarkfield species in next Bot Gazette.

I also wanted to discuss some questions of nomenclature with you. If Quercus prinoides is only a form of Q. Muhlenbergii, would it not be necessary to substitute prinoides for the name of the species? I think not, but Sargent thought so. — Again if Quercus undulata is only a rare form of the species, of which Q. Gambelii is the ordinary and widespread form, might not with propriety Gambelii assume as the proper name? I again think not.

Thanks for the Gentiana affinis var. but it does not seem to be much of a variety.

I expect you will like the red acetic acid wine bitter in summer, mixed 2/3 or 3/4 with water. I only use it diluted. The p.o order all right.

I collected on the Illinois river seeds of the Polygonum Canadensis with labed rays for you, which I will send as soon as I can lay my hands on them. Must also send you wild grapes. Bet you have on the garden fence, south of the barn both riparia and cordifolia, if I recollect right but they are stunted because too much shade.

Ever yours

G Engelmann

Question: what is the character of the wood worth in distinguishing species? Pinus contorta of the coast has heavy highly resinous wood while what I have called variety Murrayana from the Sierras & Rocky Mts has soft white wood like a fir. The botanical distinction is only in the narrower or broader leaves as far as I can see!

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Nov 19 1882

Dear Gray,

Glad to see your handwriting and thus learn that you are about again. How did that happen? Your article in Silliman (Montreal address) is timely, and the points as the lawyers say, well taken. Yes, you should have leisure to work out your part of the flora without the annoying interruptions; I will certainly refrain from troubling you, and will, if it must be done, impose upon Mr Watson's younger shoulders my botanical riddles.

I am making very little progress in my proposed winter work owing to interruptions of all sorts, some of them of the kind you speak of. As one question relates to Compositae it will not be out of place here. Letterman in a recent trip to Texas collected a Hymenoxys which has all the finely divided leaves of Bigelow's Bigelovia, but the achenia of Hymenoxys Rusbyi, but the achenia of artemisiae folius. You ought to have a specimen of it — or do you know this form?

I never heard of Lark's raising Helenium from my seeds. They must have come from the South-west, either from me (Arkansas & Louisiana) or from Lindheimer and must be either forms of H. autumnale or tenuifolium or of Leptopoda brachypoda, which is a curious thing as I showed you many years ago. Among our adventive plants is now also Helenium tenuifolium.

Eggert has lately found a curious Vitis on the Mississippi, which must be a strange form of riparia — perhaps a hybrid? but with what?? You shall have seeds, and that reminds me that I have promised you all sorts of Vitis seeds. They are ready for you — either the garden or the herbarium.

I hear that Bringle is back, and in disgust, for which I am sorry. He has done good work. He has lately studied the Cupressus very thoroughly and I believe has furnished good material to better establish the three old species.

I heard from Parry lately — sick and tired! But I think he is in better spirits now.

I did not want to bother you, and now I am going to do it — but you put the things aside — salt them down, without looking at them

The brown bud is our Viburnum prunifolium

The gray bud is what I gave you in August and took for Lantana — the other is a Persian bud

Yours ever G. Engelm

× Baltimore

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Dec 13 1882

Dear Gray

Today it is half a century that I landed on this continent × and I must not let the day pass without celebrating it at least in this way with my friends, and let them know of this at least to me very eventful anniversary.

I have had several postals from you. I am afraid you do not know Nuttalls west Arkansas Hymenopappus, of which Buckley has years ago sent fine specimens; I have laid aside one for you and also one from North Texas collected this fall by Letterman, which is quite different from the former. If Buckley's plant is Nuttall's Tetramolopium of which I have scarcely a doubt, it seems to be a distinct species (H. Nuttallii) and widely distinct from Tetramolopium Pinch. But you shall judge for yourself. I enclose in this letter only a few heads.

You then plagued the young "Springfield" and got your fracture as a warning that 70 is not 20. A neighbor of mine who is now 86 did the same thing (though the car was in slow motion) two years ago, broke the collum of the femur and is

on crutches ever since, and has never left the house.

I am suffering from my regular winter catarrh, but the change last week from 40° to −10° was too severe, and it occurred just at the time of Venus' transit; the following day was clear and cold — but no transit came back!

I am busy with Diles and tiring of them. I have again attacked Ephedra with good prospect of finishing it.

I overhauled the other day my Acanthaceae and found one, which I can not identify in your Flor. Wright collected it, and Gray said better specimens; the very large flat corolla seeds (2) and petioled 3-angular leaves characterize it. What is it

I received the other day "jumping beans" from Lower California. They turn out to be the capsules of a Ruellia, probably tuberosa, which open elastically when moistened and throw the seeds about, which latter become glutinous. I do not know whether our Ruellias behave also in this way. An excellent provision to scatter seeds only when the rain is preparing the soil for them!

Yours truly

J. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., ...188

Dear Gray

Here comes another Eichler paper — quite polemic and I think, I better leave it alone. He treats Celakovsky cavalièrement and quite superciliously and I would almost say undignified. And he uses no new arguments. He also mentions me. It seems to me proper to let the matter rest now, till new material, new observations can be brought up.

Well, I am preparing for a short visit to you and Sargent and will probably leave here about the end of the week, to be with you Saturday or Monday, if possible. Will bring Roses, and other things along with me.

And while I am writing a letter from Prof Eichler is brought in which he speaks of the above publication and expects that I am now as fully convinced as he is, and hopes that I will be thus enabled to support him by some published assent, as my short

paper in Silliman "with its doubling remarks" has ~~been~~ had some considerable influence here, much more than the very silly objections of Celakovsky! — on ot

I shall send him my 2d paper & and say what I said above to you. He seems quite sore about the matter, but says that my paper is by far the best notice of his publication which has appeared — If that is not flattery for a purpose?

à revoir!

Yours ever

G. Engelmann.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Dec 26 1882

Dear Gray

Rhellia pedunculata, Letterman, Hot Springs, Ark. Capsule obovate, acute, attenuate at base only 5 or 6 seeds, much smaller than in the others. Transition to Calophanes! I can get it for you from Letterman

I have from you Rhellia linearis, Florida, Garber (Wilson strips) is that so? it looks like the Texan plant but smaller and with smaller flowers.

I send Wright's plant of which I have spoken as you in your Herb. norm. ought to have a specimen from our Flora. I also share with you Greggs from Camargo ~~Monterey~~, which is undoubtedly also in the Torrey and probably Short. It is from Greg's first collection

The seed of Siphonoglossa Ribadla is strongly tuberculate and orange coloured, while all the allied ones have black seeds. I have specimens from different sources, all with the same seeds.

What about "Science" I do not see your name in it, but two of your lieutenants. I suppose I ought to have it.

And here comes Cuellar with an enlargement which he wants ~~thely~~ to fill! There has been too much space before, for trash. I do not hear anything of his plans for a western flora, does he find the work too arduous?

~~I do not know~~ and do not ~~have~~ Rantzy specimen; have ~~get~~ it? Yes I have it as Dicliptera

I send Crépin's notice of Rose minutiflora

I received these days from West Texas a Dicliptera which is very different from palchellum; I will send you a specimen,

such as were made and sent by me now — Otherwise.
It might possibly be your Caesalpinia Mexicana
but has very long stamens — large roundish
fimbriated bracts, short peduncles etc etc.
entire, sulphur yellow petals.
— I have packed up what I have for you
partly also seeds for the garden & grape berries
which you can divide between Herbarium and Garden.
Among the grapes is one which Eggert found
this fall on the banks of the Mississippi, and which
I find to be a form which Michaux in his herbarium
distinguished as Vitis rubra (of which I have sketches
and notes and a seed); it was afterwards placed
with Vitis riparia and may belong to it, but the seed
is various, large and thick.

And now good by for this year and
my best wishes for you all forthnext!

Yours truly

G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Dec 29 1882

Dear Mr Watson

Mr Reverchon now sends specimens of his common sonbrak of Dallas County; his bush is Q. San Sabaiae Buckley and is a scrubby form of Q. Durandii Nich Buckley and Sargent got at Austin and Dr Moohr at the old, much doubted Buckley on locality in Alabama! Q. Durandii is to be the name and the species is good.

But that is not what I wanted to talk about. Reverchon sends two Umbelliferous which, he says, you and Gray have both pronounced to be Apium Bopei. But they are certainly distinct

A Bopei according to the original description in Bges Report has large + fruit, rough on the edges; leafy involucre and involucells; the umbels are terminal, though that is not mentioned in the article. This is more usually erect.

The other is a plant Nich years ago I sent to Dr Gray as A. Butleri from Dakota Territory; I have it also from Mr Geo Gray, and now from Reverchon; Gray then pronounced it A Bopei, but it is quite distinct: prostrate or so, with nodiflorous or rather opposite flowers umbells, small, nearly smooth fruit. Want Hall's plant no involucres or involucells

is, I do not know, for I have no specimen.

Now, this is an undescribed species, entirely distinct from Popei; as nodiflorum is already preoccupied, it might be called Apium Leteriflorum.

Now look at your A Popei and see whether you do not find both species mixed under that name.

I sent the Package today to Dr Gray with a few interesting things.

Happy New Year to you!

Yours ever

G Engelmann

I see Sargent is worrying over Lewis & Clark's Conifers of Oregon – a thankless and useless task!

It is possible that that Umbellifer is among Helmboldt's plants, for Gregg got it at Saltillo.

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 11 1883

Dear Gray

as to Dianthera parviflora I completely give in, and am ashamed that I did not find out long ago, as I have Lindheimer's specimen; but this has the long spikes, and has a different look and no ripe fruit — this as an excuse!

But in Hymenopappus I can not agree — Letterman's has the leaves of tenuifolius, but compare the achenes and pappus, the former have certainly the so prominent ribs, but are so much smaller and less hairy, and the pappus short

Butler's plant has a very peculiar foliage, and the stem quite foliaceous, achenes similar to corymbosus, only smaller, but flowering tube so long and slender

I enclose in this letter a sample of Hymenopappus flowers and Achenes; look at the differential characters as they are thus placed side by side; Lettermanii seems hardly distinct from tenuifolius, long, woolly achenes long upper part of flower tube and short lobes, while Lettermanii flowers is very different, as well as the achene. I would make it a new species and name it H. Nuttallii — but this — you know best!

You will find that achene & flower of Letterman's plant corresponds best with Scabiosaeus, through the leaves doubt.

The specimens I have sent are all for you, if you wish them; I have duplicates

of them.

Now as to Nuttyo. I have examined it carefully and find that the western (i.e. Nebraska and Hayden and Nuttall) have larger seeds, larger capsules, but no other difference. Bellen's Indian territory has broader somewhat incised leaves. I lay specimens aside for you — Bents are larger or usually shorter the calyx the lobes of which are orbicular to oval.

All three, pusilla (or elongata, a poor name) B. glutinosa & heterophylla have occasionally laciniate dentate leaves and have all of them scrobiculate seeds, glutinous when moistened.

I might send a note about this to Coulter's Gazette, and also your correction of name if you think proper. Will you have to restore Pursh's name? It is so bad!

We have cold weather and little snow but a gloomy dark sky, while you, I see, have abundance of snow.

I hope you are getting over your colds; I fear you keep too much within heated rooms — comfortable, but debilitating!

Yours ever

G Engelmann

Please return the Hymenoxypappus chart

will write to Wislizenus soon

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 13 1883

Dear Mr Watson

In more carefully looking over Apiaceae I find that Gregg's Plant is something else; at first I thought of leptophyllum, but that is an erect plant with capillary leaf segments. I have however a specimen from Galveston, Lindheimer, Nich, I suppose, you must have, which is prostrate and with a little broader shorter leaf segments, and is probably not distinct from Leptophyllum. Gregg's has similar fruit but short compact umbels; I must send you a branch. But leaving this Mexican out of the question now, the plant of Rcoscher and Buckley and, as you say, Hall is a distinct thing.

You are right of course that the umbel is terminal, but then the branch just under it, overtops it, pushing it aside, so that it, the umbel, becomes lateral. The name nodiflorum is often used - and if it was not already employed for an Apiacea, I would choose it; in its place lateriflorum might stand as well, designating a peculiarity of this species - though others also have it - which however would not prevent its use, as little as glaber, lævis, pubescens, multiflorus etc which often apply to several species of a genus.

I wish you would see, whether you have Lindheimer's Galveston plant.

Your Cucurbitae bother me somewhat, and though I hate going over them (or that group) again, I have to do it, I suppose.

C. Potosina is a good species, seems to me. The capsule is not circumscissile, but very thin and tears off. It is allied to Carvensis but well distinguished.

The other I suppose must be annexed to C. odontolepis as you suggest, though the corolla is wider and shorter, styles shorter, lobes of calyx acuminate, often reflexed. Scales deeply fimbriate and much larger, ovate, but these are no essential characters. The name however don't fit! So much worse for the name.

Yes, after revision, I see that the Cusco & Chilean must be tinctoria and not Jalapensis, which has much smaller flowers and more decidedly subulate styles. I lay aside a fragment of Jalapensis for you.

Did I ever give you the character of nitrofornis? Do you want those of Potosina? English or Latin?

I enclose a slip written long ago as a beginning of a letter.

My Happy New Year! comes rather late, but not the less heartily. I hope the big snowstorm does not interfere with your health or work. We have had only a trace of it.

Yours truly

S. Engelmann

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan. 17 1883

Dear Gray

Mr Eggert brought a Col. of plants which he collected in South west Missouri; among them I find the following Compositæ which I had not known so far north

Aster peludosus
Aplopappus ciliatus
Berlandiera tomentosa

and also Frogia nepetæfolia Cav. as now established by Müller Arg. & Grosiis arachnoides

All these are true natives, not along rail roads, which now do a great deal to vitiate our native flora.

I ought also to mention that on the banks of Lake Michigan in northern Illinois I found last fall Helianthus occidentalis but that may not be new — I see you quote it from Wisconsin.

Has Dr Masters sent you extracts of Agave Lecheguilla & A Potorine? If not I can supply you.

As I write to Mr Watson, I close this and enclose to him

Glad to take a little recreation in Washington, it will do you good.

Yours truly G Engelmann

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., May 14 1883

Dear Gray

It is a long time since I wrote you, but I have passed through a miserable time and in fact believe or begin to believe only that I am on the mend, that I will see daylight! With my old bronchial catarrh, which evident though it often was, never made me uneasy, a catarrhal febrile affection of the stomach and whole intestinal tract connected itself, miserable weakness and excessive asthmatic trouble followed and to crown all I found that my pulse became reduced, at first to 45, then to 35, to thirty and lately to 26 or 28 beats in the minute! Oedema supervened – and though I kept out of bed, rode out when the weather permitted, I began to give up hope. At such age I went

in the country, to my cousins, Emily's father, where I could be in the open air, take a little exercise, watch the developement of the grape vines; and I think I can see some improvement — pulse at 30 again, some appetite etc.

Under the circumstances it is a bold undertaking to go to Europe in 4 weeks! But my old plan to spend a week or two before sailing with you and Sargent must be given up. If well enough on my return, it may be attempted then.

But all the important things which were to be accomplished in the past winter have fallen through. It is too miserably bad!

Well, now, I have talked more than enough about myself —.

I send you a package of plants some from myself others from Eggert and from Letterman. They both refused any compensation, were glad to assist science through you. I think you will find some of the things of interest, at least as to locality. You will find plenty of specimens of the new black Cactaceas.

I get new Cacti over and above Dodge Siler sends from South Utah a curious Mammillaria — like Echinocactus, and last fall he had another very striking new species — of this latter I have enclosed a specimen in your package. The Cactaceae ought to be done over again.

And now good bye — and let me hear from you and what you are doing — how your work progresses

Yours ever

G Engelmann

I had a letter from Parry lately from San Francisco. Bright at Tucson hemmed in by drought and the Apaches.

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., May 24 1883

Dear Mr Watson

Glad that we seem to agree ~~now~~ about Ephedra. I thought of publishing my synopsis of our Ephedras in Gray's, but will as you suggest wait till more material accumulates.

We have here the same rough Agave from San Luis Potosi growing, and I had the seed distributed under the name of Agave gracilispina. But there is a hitch – Parry's flowering specimen (dried flowers and fragments of leaf ~~attached~~ with them) shows no roughness, so that I doubt, whether Parry did not mix things, and whether the flowers really belong to the rough plant – also Barnette's note that it is <u>planted</u> for Mezcal.

Your suggestion that it may be asperima Jacobi is a good one (leaving out the doubtful flowers and the seed & pod) and I believe it is that they – and comparing it with Silvicana, which is growing at Shaw's side by side with it, I think it is quite different.

Jacobi p. 61 of the collected notes (1864) says the seed was obtained from Lindheimer, & Galt

in Munich Garden. This is a mistake — Lindh. never, I think, got such Olynia seeds. I extract Jacobi: A. acerifolia, pennifolia, foliis — basi vix attenuatis in apicem brevem marginatum subtrigonum a spinam terminalem sensim polliciarem valde sulcatam scabram attenuatis — utrinque asperis, obscure viridibus, junioribus glanduloso-pubescentibus; margine profunde exarato [sinuato?] repando grandi-dentato; dentibus validissimis

Leaves 1 foot × 2½ inches rough on both sides, especially on margins & tip — stalk nearly curved

The it was asperima, but as to flowers doubtful! The brown margin in our specimen is decisive

Can you help me as to authority for Melocactus? Dr. Prod. quotes DC. Dissert. 1826, which I do not find in Pfeiffer nor any where else. All other authors quote Link & Otto 1827 except Miquel who has DC. — Of course it is an older name (Bruchin, Journal) but the question is about our present genus Melocactus, one of the most anxious of all Cactacea — What is DC. Dissert? (not Revue, which I have

I had a letter from Gray a few days ago and he will write soon

My health is perhaps a little better

Yours truly

J. Engelmann

Geo. Engelmann, M. D.
3003 Locust Street.

St. Louis, Mo., May 26 1883

Dear Gray

Thanks for your welcome letter, and the same for the book which came a day or two ago. Enclosed please find the money order for $7.50.

It is a tremendous work, and I suppose Bentham has done the greater part of it. What a worker he must be!

How I am getting along? I think I am slightly improving – at least the appetite is fair. The worst of it is that I dont feel any energy, every little work requires an effort and tires me out – I do as all the old cripples do, put my hope on a sea voyage, though I know full well it can not change my heart.

I sometimes think it would be a good thing to come for a couple of days to Cambridge before I embark – for a change, and for some stimulus, but do not know how I can do it

Glad that you feel again in working order – and have begun Lichenaceae! So you feel yourself nearing the end of

this big work

I have written to my cousin, Theodore Engelman, Mascoutah, Ill. for 10 gall white Concord wine for you, when ever he opens a good cask, to be sent as freight.

Travelling in winter or in such — winter-like spring don't seem to agree with Mrs Gray; I hope rest and home comfort has fully restored her.

We all have to begin to be a little more careful of ourselves — which I for my part am now at last convinced, I ought to have begun to be long ago! Too tard! rang into Louis Philippe's ears in Febr. 1848 — and the word is repeated every day!

I hope you may find some things in the package that interest you, if only for locality. One of Letterman's Helianiums, with broadly winged stem, is quite unknown to me unless it is microcephalum, but Pappus differs.

Yours ever

G. Engelmann

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 2 1883

Dear Gray

My cousin writes me that he has found trouble in sending small packages of seeds by freight; they are often left for weeks on the road or even lost (stolen?). What shall he do?

While I am writing, Letterman comes in and hands me several curious things. Carya perhaps a hybrid of tomentosa & porcina; Crataegus tomentosa now yet in bloom, with very fetid (almost carrion) odor, and C. punctata with fruit half grown, at least 2 weeks earlier. Then two clovers — a small head which is undoubted stoloniferum and two larger ones of an erect, stout plant, white flower, probably nothing but reflexum, but fuller and white; said to become common with him.

The frost of May 23 has injured

many plants with him, Oaks, Hickories etc, there was actual ice; here in Town we had only slight white frost and no injury.

Health perhaps a little better, but pulse still alarmingly slow

Yours, truly

G Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., June 12 1883

Dear Gray

I had given you my complete address several times before.

Theo. Engelmann
Mascoutah
St Clair Co
Illinois

I have consulted a merchant here who ships much; he says such small parcels go safer and quicker by Express; larger ones may be shipped as freight, but are always exposed to the danger of delay, cars being side-tracked etc.

I shall be next week after Tuesday at the Grand Hotel Broadway & 31st St. N York.

Have I ever mentioned the rediscovery by Egert of Michaux Vitis rubra (name only found in his herbarium) I have written a full account for Bot Gazette. It strikes me now that what I had 60 years ago from German Gardens as Vitis pedunculata Vahl might be the same thing.

But how could Vahl have got an Illinois plant 100 years ago? – he says it came from Virginia and is probably a Cobea form of scandens. Delaubelle Dont know it.

What I am driving at is whether Vahl says more than is contained in DC's Prod. or whether it is possible to find out any thing about Vahl's typical specimen.

Turn this over to Mr Watson with my compliments.

~~We will be in th~~ Vitis palmata of German gardens is glabrous and was considered a form of riparia. In the old Flora you place it ? with aestivalis.

I have written to Letterman about the clovers for you

From a cold May we have entered upon a scalding and rainy June

Well, Hieracium would keep you too long – and then there is an end of it unless you grapple with Asters again! I hope you will have ease and comfort in summer.

Remember me kindly to Mrs Gray

Yours ever

G Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

Grand Hotel, New York

~~St. Louis, Mo.~~, June 22 1883

Dear Gray

I was gratified to find your letter here on my arrival Tuesday night, and the enclosed by Watson, to whom my best thanks, came just in time to convince me of my suspicions about Vitis palmata. I had already written an article for Bot. Gazette about "V. nebra" and have at once set to work to substitute palmata. Thus we get the species well established and under an old name, which nobody knew well what to do with.

The weather and trip so far was and is delightful, no rain and no dust and no heat — we travelled right on the head of these storms which made every thing lovely for us.

I just come from Passaic where I spent last night with Sharber, who abides very pleasantly and instructively.

My address in Europe will be my sisters

Mad. Von den Velden
20 Mylius Str.
Frankfurt a/M
Germany

and I should like to hear from you, if distance does not make you forget.

My plans are unsettled, I may come back in Sept with the young folks, or stay longer if I find stay satisfactory and pleasant but I fear there will be a great difference between 15 years ago when I was there with my wife and many friends yet living, and now when isolation seems the word.

and now good bye, take care of yourself and follow Mrs Greg's good advice, as she often knows better than you do yourself about your health.

Remember me most kindly to her. and don't forget Wilson

Yours ever

J. Engelmann

Kreuznach Sept 2 1883

Dear Gray

I learn from Perry that you have been very industrious and have almost finished Compositae — that is all I have heard from you since I left America. I have done less well, have accomplished nothing, given up travelling as a bad job and am returning home. My intention was to go to England, Paris, Italy, Switzerland, spend the winter south and return home next year — but all that is over. My asthmatic troubles have increased so, that travelling has become a painful labor. I had begun pretty well in Berlin, with Eichler and others, but broke down, and have since been only a few days with De Bary in Strasburg and then with my relatives, whose kind care ~~were very~~ were very pleasant, but could not relieve me.

I sail with George and his wife next Saturday from Antwerp and hope to be in New York by Sept 19th or 20th, when a letter will reach me at the

Grand Hotel, Broadway & 31st Str

Whether I can come & see you will depend upon the state of my health and whether you are at

home in the city. At all events I should be glad to hear from you

Remember me kindly to Mrs Gray

Yours ever

J Engelmann

Geo. Engelmann, M. D.
3003 Locust Street.

Central Hotel, New York

~~St. Louis, Mo.~~ Sept 21 1883

Dear Gray

Thanks for the kind letter I found here yesterday on my arrival. My health improved especially on the 10 days sea voyage and I shall have no difficulty in accepting your and Langdon's so very kind invitations. I have telegraphed to S. and expect him here today or to hear from him.

I can not say much of my Catarrhal studies in Europe. There were scarcely any thing, my health and spirits being so miserable, and in fact the whole trip was a failure.

I was at Thurber's last night — there Vernonia Lindheimeri green and smoothish like V. Lettermani be the same, a smoothish form of it.

Every thing else verbally next week

Yours truly

G. Engelmann

My son and wife have gone to Philadelphia, so I am alone.

To Dr. Geo Engelmann
3003 Locust Street St Louis Mo

You are hereby notified that the undersigned, GEORGE LANG, assignee of the firm of F. A. REUSS & COMPANY, of St. Louis, Mo., will publicly proceed to adjust and allow demands against the estate and effects of said F. A. Reuss & Co., on Friday, November 30, 1883, and during two successive days thereafter, that is to say, November 30th, and December 1st and 3d, 1883, commencing at 9 o'clock A. M., and continuing until 5 o'clock P. M. of each of said days, at the office of JAMES TAUSSIG, Attorney at Law, Rooms 1 and 2, 509 Olive Street, in the City of St. Louis, Missouri.

All Creditors who fail to attend during said term will be precluded from the benefits of said estate.

GEORGE LANG,
Assignee of F. A. REUSS & COMPANY.

ST. LOUIS, MO., [illegible] *1883.*

Some of Dr. Engelmann's

latest work

Geo. Engelmann, M. D.
3013 Locust Street.

St. Louis, Mo., Octob 24 1883

Dear Gray

here I am safe and sound — so far as it goes — thanks to the good rest I had on shipboard and rest together with pleasant influences I enjoyed with you. But here I find every thing yet in disorder, as is natural after an absence of four months — and Georgie's house not yet finished. The railroad trip was easy and not fatiguing at all*. The great trouble with me will be to keep quiet and avoid physical exsertion, a difficult matter with me as long as I feel otherwise well.

It will take me some time to get into trim, and be able to work steadily — at present numerous accumulated letters have to be answered, specimens to be examined and named etc. Among the latter* two Opuntiae from Pipestone County Minnesota! One is O fragilis without doubt, the other a quite doubtful

* The dinner of course went off but the execrable North Carolina wine as you suggested, and my poor deluded head suffered all my vanity, till supper came

* The latter two

C. Missouriensis — perhaps a high northern form.

I shall write more when I have more to say.

It may interest Mrs Gray to learn that Mrs Marsh has been here two weeks with her sister, Mrs Wislizenus, but had left before I came back.

Please remember me kindly to Mrs Gray and believe me yours faithfully

G Engelmann

Just now the last Gard. chronicle comes and tells us of your and Hallett's busts on top of Shaw's plantshouse. They are not very good I think — made from photographs. As he went to the expense he might have had it taken from life! But I am, as Sargent says, a pessimist! which means, I suppose, a grumbler

Geo. Engelmann, M. D.
3003 Locust Street.

St. Louis, Mo., Nov. 27 1883

Dear Gray

Dr Schenck writes: "a party of hunters on their return from Gallatin County, Ill. brought some evergreens, among them Pinus mitis, Junip. Virgin. and a third which I took to be Thuja occidentalis or Cupressus thyoides; I concluded the latter as Gray, Manual seemed to include Southern Illinois for this species. This was over 10 years ago and no specimen was preserved."

Have you have the slender authority for the species. He says he will investigate.

— I just get your postal. I of course have read the note about Tonquinian species in Wright etc, but, but, memory is in a sad state, it seems, with me, I had forgotten all about it — a poor excuse, you will say, and justly so!

I have now finished the drawings for the two plates which I wish to get prepared by photography and electrotyped

You offered to attend to that, and I hope you can do it when you happen to go to Boston, without too much trouble. I did the drawing as well as I knew and suppose it will do for this purpose.

I must write the article on metamorphosis of carp. scale of Conifers, — had a letter again from Eichler, who "hopes" that I will be able to fall in with his views — But I cant.

I wish the plate reduced a little more than one half, so that it will fit our pages, which are 3 7/8 inches wide, the printed part.

Somehow or other I had more trouble with heart and lungs when I came back, but am now getting over it again and feel more buoyant —

I hope you are all well and you make good progress in your new volume —

Thanks for the Trans. Amer Acad. which I got some time ago. I might quarrel a little about latinity, but suppose it is all right —

Yours ever

G. Engelmann

Geo. Engelmann, M. D.
3003 Locust Street.

St. Louis, Mo., Dec 13 1883

Dear Gray

I send today a lot of roots of Helianthus hirsutus, which Mr Eggert obligingly got for me, to Prof Sargent, and requested him to share with you. You will find that they make very long stolons, but no tubers. I have sent him also seeds of our 6 vitis species (only labrusca and vulpina wanting of the east Mississippi forms), so that he will have plenty of young plants to turn over to the garden, if wanted.

I send you a nursery catalogue of Messrs Bush & Co of this place, which of course has only a secondary interest for you. The botanically essential part is my addition of which I send 3 extra copies, for you, Wilson and Goodale; I had to say something about hybrids because in France they, especially Millardet of Bordeaux, see hybrids in every deviation from the assumed typical form, crediting

nothing to innate variability of species. He sent me his last publication (with nice plates) but his position is shocking; he very often discovers 3 and I believe even 4 parents (grandparents) in certain cultivated American forms. And somebody told me that another Vitis man in France has found over 2 or 300 forms in what they get as V. riparia.

I have overhauled my Helianthus in Herb. We do not have here in Missouri any of your eastern ones, it seems, though some of them come northward. H. gigantus common in Wisconsin is always easily distinguished by its very pale yellow rays — already spoken of by Torr & Gr. H. hirsutus, generally narrow leaved, has sometimes leaves 3–4 inches wide, and is very often 4 feet high.

H. laetiflorus and "doronicoides" seem to run together.

Your tuberosus and "doronicoides" may be identical, but one form of the latter has opposite, the other alternate leaves. H. tuberosus is collected as far north as Lake Superior (Bayfield)

What is this shrub that Letterman brought from Opelousas? Album, large Catalpa; apparently even-green

yours ever
G. Engelmann

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Dec 28 1883

Dear Gray.

You had in garden a Cereus with yellow fruit (in October last) named — Cer. eriophorus? Pfeiff. The name is correct; the older name is, however, Cactus repandus Lin. Cereus rep. Haw. with lots of synonymes (s. brepandus, divaricatus, erectus etc.)

Cer. Martini Salm-Dyck 1854 published in some journal. not yet in his monographie.

Here comes again the question of quoting. Where is a plant, a Cactus, quoted with Hort. Berolin., Hort. Angl. — In the former case the real author is probably Otto, in the latter we do not know who. — Quote Otto, ex Pfeiffer Enum etc.

And about Orthography? The man's name was Peyrese. Linné who is the author of the Genera (in Gen. Pl. — thrown into Cactus in Sp. Pl.) writes Pereskia after Plum.; Dr. Candolle who reconstituted the genus says Pereskia Plum. others Peiresia Peyresia etc.

Thanks for the Electros, they are quite satisfactory, but I must learn the character of the drawing better, shading wont do at all; apt to blur.

Does your Garden care for Cactus seeds? I will send any how two, just received. one is my old Echin. cylindraceus, which had

become quite doubtful to me, but seems to be now well reestablished; the other is a new one of the same Group (Wiligeni) which I name for Orcutt. E. Orcutti.

I enclose a $5. bill in payment of my debt to you and hope it will come safe.

Sargent writes of dreadful cold weather; with us it is mild, and to day lovely, spring like; a few cold days.

Best wishes for the holidays or rather for New Year, as Christmas is past—

Yours truly

S. Lyman

How does matting progress?

I have sent fresh seeds of all of our Vitis to Sargent, where your garden ought to get young plants ~~next~~ fall.

Last Letter

GEO. ENGELMANN, M. D.
3003 *Locust Street.*

St. Louis, Mo., Jan 23 1884

Dear Gray

I find among my Juglandaceous notes the enclose sketch, which will probably answer your question. I now recollect that you sent me a number of specimens and I returned part of them, which I suppose you now possess.

Halsted's "Queer a hybrid" reminded me of another queerer one of Kirtland's, the photograph of which I also send along (both to be returned). Pity that these things could not be more carefully examined. As it is, I at least can not make any thing out of them.

Nothing new here. We have had a terribly cold spell (Jan 5th — 23.°5) but have now moderately cold winter weather. How do you and Mrs Gray stand the winter? I hope, well.

I am so so, short breath, only when moving, therefore difficulty of locomotion otherwise well.

Yours ever
G Engelmann

Prof Asa Gray Cambridge Mass

GEO. ENGELMANN, M. D.
3003 Locust Street.

St. Louis, Mo., Feb. 11 1884

Dear Doctor Gray

We have been left alone - my dear good father has gone. We did not think of it - a possibility for years - I little dreamt that the presentiment he had would come to true - Last summer - speaking to me on my birthday - July 8th on the steamer - he said that he had always had the feeling that he would live to the same age and enjoy the same span of life as had been granted my beloved mother - and so Heaven willed it - he granted the wish and father has

since lie quietly - expectorate but little - and that easily - breathe without difficulty - pulse but it rises & falls - all this he observed and felt that he was improving - when Dr Robbins came at 10. & received him with a bright smile as the words - "Dr. you come at a time I am sick" -

This was the night I called the death struggle - and one I set by him all night - expecting death every moment - receiving it would come at any moment - realizing it would come as it has - and gone to bed yet ?

Sunday he sat up all day in a large easy chair - which the entire position seemed have been torture - glory - dear - rising - this seemed was a sweet

joined that noble mother whom he so adored -

He was taken sick Monday - two weeks ago "only one of those colds which would pass off" - he had so often weathered them - would not listen to our entreaties for care - and when Tuesday - Jan. 29 - was the anniversary of mother's death - 5 years ago - she died - shortly before her 75th birth day - father was unwell - broken in spirit by sad memories - yet he would none of our care and attention. So he worried on until Friday eve - after writing his last letter - to Drs Perry and Howard - he told us - to our great relief - that he would remain in bed Saturday - that was Feb. 2 - his 75th birth day -

the morning - unusually gaily - happy & light. His breathing was offensive - he spoke with difficulty - and could not sleep - he had set up most of the night - in the evening of the 5th he seemed uncomfortable - he remained in Saturday in the same uncomfortable - he remained in his room - not in bed - sitting up during part of the time in a chair -

Toward P.M. - when fainting to be to bed - he was seized with an violent spasm in stomach - struggling for air - it was a terrible hour - muscles - heaving but with all his power - air - air - he cried - in night a gain of morphine - relieved to quiet him - and he was laid comfortably - feel easy -

Geo. Engelmann, M. D.
3003 Locust Street.

St. Louis, Mo., 188

glorious day - clear and bright as day can be - and so was he - sitting all day in his easy chair he ~~chatted~~ conversed with friends and relatives - cheerily and happily - even with Capt. Beudin - who was en route for the Smithsonian this dying man spoke of his work - of the fauna and flora of the regions he had left - of his birds and eggs - so that he - like all others told me that I was nervous - mistaken etc -

The memory of that day - I can assure you - is a treasure to us - the bright moment which some have before the darkness of death was a bright day with him -

But since that day - a gloomy mist has hung over us - a

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., ... 188

perfect Louden fog - Toward ten o'clock in the evening he went to bed - arranging everything as he was wont to do. lamp - water etc by his bed - directed me to take his observations - wind the clocks etc - some papers which we could not find he said "he would hunt up himself tomorrow"

From Sunday night at 10 - he lay in his bed - unconscious - breathing heavily - the oedema rising - and we by his bed sat - expecting death every moment until about five - Came to his relief Monday afternoon at 5.30 after a tiring struggle for "air and light" - For that he called - God knows - if there is light - it has come

Geo. Engelmann, M. D.
3003 *Locust Street.*

St. Louis, Mo., 188

to him and if there is a coming together in a better world. the will of his heart is gratified and he has joined my mother.

Now dear Doctor. I know that you will be a friend to me and I beg a little of your time to advise me as regards father's herbarium.

Did he express his wishes to you? – please tell me what he said to you about it. and what your ideas are.

I have asked some of Drs Perry. and begged him to come here. and advise me.

Please confer with him and

join me your opinion.

Father hesitates between Shaw's — the Washington University and Academy of Science — the latter was his child — by it did not join and sufficient from others —

He left me well — but I know his wishes — to further the Academy — if deserving — if an equal amt. is raised by others —

But what shall I do at present with the Herbarium.

Did Father speak to you of any one to assay it?

Pardon me — I have asked enough — you can appreciate my feeling —

May not join me in expressing my respect and begs to be kindly remembered to Mrs Gray —

So, also does —

Sincerely yours

Geo. Engelmann

Dr. George Engelmann,

Born at Frankfurt on the Main, February 2d, 1809.

DIED,

IN THE MIDST OF HIS SCIENTIFIC LABORS
AT HIS HOME IN ST. LOUIS, ON MONDAY, FEBRUARY 4TH, 1884,
IN THE SEVENTY-FIFTH YEAR OF HIS AGE.

3003 Locust Street, St. Louis,
March 10th, 1884.

Gerardia stricta Englmann rad. annua, caule erecto, supra ramoso (ramis erectis) glabro marginibus foliorum decurrentibus lineato; foliis linearibus plerumque oppositis fasciculatis, saltem globiscaulis, supra scaberrimis; pedunculis plerumque oppositis calyce aequantibus v. superantibus, calyce campanulato 5dentato, dentibus triangularibus acutis, corolla obliqua ventricosa (magna, rosea, maculis flavis) puberulenti, filamentis et antheris pilosis!

Prairies, Chicago Ill. naked bluffs, St Louis Sept & Octob.

Intermediate between G. purpurea & G. fasciculata, distinct from both by the longer peduncle and the calyx being broadly dentate (not truncate with subulate teeth), also by the rose colouring corolla and the less hairy filaments, the larger capsule etc.

Distinct from G. purpurea by the erect growth, depressed branches, strictly linear fascicled leaves, calyx. — from G. fasciculata by the smooth stem and branches, plane not revolute margin of leaves, calyx etc. —

Gerardia spiciflora Lyon radice annua (bienni?) caule erecto infra foliosoramoso, supra simplicissimo, subsaepe; foliis oppositis oblongo linearibus basi attenuatis, inferioribus subspathulatis obtusis, superioribus acutiusculis margine scabro revolutis; floribus oppositis, ad apicem caulis elongati in spicam dispositis, bracteis et pedunculis longitudine calycis; calyce subregulari 5dentato, dentibus ovatis obtusis, corolla (purpurea, faucibus) ventricosa, filamentis cum antheris rubro pilosis.

Margin of brackish stagnant water Galveston Isl. May. T. Lindheimer

10–15 inches high, remarkable by the long naked flowering stem and branches; corolla funnelshaped, not much ventricose 6–9 lines long. Apparently near G. maritima but distinct by the greater size of the plant, but smaller and naked flowers and fruit, the revolute, on the margin scabrous leaves, which appear to be also somewhat succulent, and by the form of the calyx

Veronica Anagallis fm Wisconsin: sections of calyx ovate lanceolate, oblong equal to the didymous capsule, in my European specimens they are linear lanceolate, acute longer than the suborbicular emarginat capsule.

Scutellaria compactum = C. tabiflora n. sp. end of May Prairies open woods SW Missouri and NW Arkansas, caule erecto glaberrimo 2–3 pedali fol. glabr. ovato-lanceolatis, superioribus integris, superioribus latioribus cordato-amplexicaulibus denticulatis, inflorescentia nuda elongata interrupta, pauciflora, oppositis, adpressis, confertis; corolla pulescent tubulosa (non ventricosa) tubo incurvo limbo expanso (ex purpureo albida) sterile filament elevate above and unciinate, barbate as long as the other stamens.

Mimulus reniformis n. sp. in cold springs SW Missouri end of May — glaberrimus lucidus, caule procumbent radicante, adscendent, foliis ~~obovatis~~ obtusis, crenato dentatis, integrisve, inferioribus longe ~~obovatis~~ obovatis basi subcuneatis, ~~superioribus~~, superioribus reniformibus, sessilibus

orbiculatis brevitor petiolatis; fl. axillaris (non racemosis) pedunculo longiores; calyce obliquo dentibus obsoletis subaequalis. = M. lateus ?

Remarkable personatae collected by me, besides the above mentioned ones

Lindernia attenuata M. Arkansas wet places, July!

Gerardia heterophylla Nutt sandy banks of Arkansas River August

G. glauca fertile woods Missouri & Arkansas July, August.

G. pedicularia Pinewoods Arkansas Sept.

G. flava Prairies, thickets open woods July

Gratiola missouriana Beck May, margin of ponds Missouri & ~~Arkansas~~

Buchnera americana June – Sept. Missouri & Arkansas

Collinsia verna Nutt – Missouri & Arkansas April May

Seymeria macrophylla thickets in shady rich woods, near water; July Aug.

Herpestis rotundifolia Missouri August

Veronica peregrina Missouri Arkansas, Texas, (common

arvensis – fields, Missouri

serpyllifolia Ohio native?

Anagallis North Illinois & Wisconsin native!

scutellata upper Missouri (Geyer, Nicollet) native!

serpyllifolia banks of Ohio and lower Mississippi native?

No other Veronicas here!

Gymnandra Hooglonii has been found by Ch Geyer on the St Peters River (upper Mississippi) and near Beardstown Illinois.

Personatae collected by F. Lindheimer in Texas

Gerardia fasciculata Ell. wet prairies, Houston September

G. setacea Prairies, Lynchburg July

G. flava Thickets, Houston June – August

G. purpurea Galveston May

G. spiciflora n. sp. Galveston May on brackish water

Gratiola virginica May.

G. aurea Nutt March to October

G. aquatica on ponds, wet prairies, ~~woods~~ Houston May to Sept

Veronica peregrina (also in Arkansas, August, Sept.)

Buchnera parviflora n. sp. Dry prairies Houston etc April & May

(wet prairies, on the coast, brackish, May to July)

Antirrhinum amadense open woods, Houston March, April)

Herpestis cuneifolia wet places, clayey soil Houston, also margin of ponds = S. puberulus var. July

Pentstemon gracile Nutt = ? Dry prairies, Houston April, also October

P. Digitalis = Cobaea Nutt April & May, Houston, high prairies, ravines

Lindernia dilatata M. wet places Houston Sept

L. reflexa Ell. Galveston May (also in Missouri & Arkansas)

Euchroma indivisa n. sp. – Prairies Houston and on the Brazos Marsh & April belongs not here but may be mentioned as a nearly related new texan species

Dr. Engelmann, St. Louis

Dear Mr Watson

Can Fendler's Santa Fe 758 be Acacia hymenosepala Torr? It is too young. I just get a similar specimen, as young, from Santa Fe sent as Tanning material; it is evidently biennial, and the Tannin is probably more abundant in the perennial species with thick rootstocks.

March 27th 86

Dear Mr. Watson

Here the answer to your postal!
And a few questions: What is Dr Rugel's given name?
Was Gray's Manual 5th ed. issued 1867 or 1868
I find both dates in my mem. about Isoetes.

Parry has left us a few days ago, will be with you in a month — is among other things to examine into Gentiana
I have what I take to be a form of Letigera (from Mr Austin)
What is Parry's Euphrasia? chiroscidia or gracilis?
G. Menziesii ought not to be separated from Scoptrum, I think.

Yours, G. Engelm

Reviewing my Euphorbiae with the lights of Boissier I find the following specimens received from you

"Euph. adiantoides" Wright, Nicaragua — is Euph astroites Fisch & Mey. (Boissier No 200)

Wilkes Expl. Expd.

No 1. E. multiformis var tomentella Boiss
2. E. cordata Meyen
3 & 4. E. clusiaefolia
5. E. celastroides Boiss
6. E. multiformis glabrata (I have little doubt though no seed)
7 in part = 1, part = 5 (1 pubescent 5 smooth)
8 I take to be a new species between E. celastroides and E. multiformis, which I would name E. lorifolia. Could you send me capsule & seed? Pray, do!

9
10 and all three from the Coral islands are E. Chamissonis Boiss
11
12 E. Atoto first from Fejee
13 E. Taitensis Boiss. I have received the same from you formerly as E. Atoto from Taili without name of collector.
14 from Matia = 10
15 & 17 Samoa & 16 Mindana = 12 } E. Atoto

Wright, from Leo Choo is not E. laevigata = laevis but E. halophila Mey (all too closely allied!) or also a good many others of Boissier species)

not quoted by Boissier

Funck Venezuela 1203 (is No 236
E. Gollmeriana Kl.
Your E. Guillicluni is fide Boissier No 627

E. Siboldiana

Among a lot of Hay from western Missouri I meet with a few nice things, among others Amphicarpa, Desmodiums, which I did not know to grow so far North & East.

Yours truly Asa Gray VII 29

The seeds of Jussiena are so different in different species as to require examination, and afford fine characters for sections.